Service Manual

74 VP600/02B

LCD Colour Projector

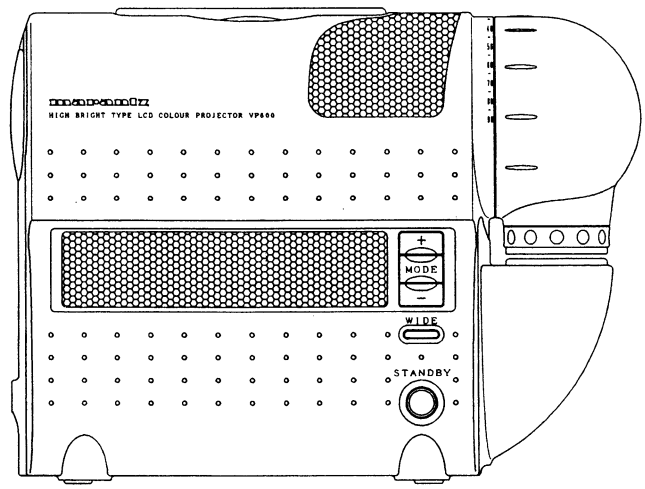

TABLE OF CONTENTS

SECTION		PAGE
1.	TECHNICAL SPECIFICATIONS	1
2.	BLOCK DIAGRAM	2
3.	FUNCTIONAL DESCRIPTION	3
4.	ADJUSTMENT PROCEDURE	4
5.	ADJUSTMENT POINTS	5
6.	SCHEMATIC DIAGRAM AND PARTS LOCATION	6
7.	WIRING DIAGRAM	22
8.	EXPLODED VIEW AND PARTS LIST	23
9.	ELECTRICAL PARTS LIST	24

Please use this service manual with referring to the guide (D.F.U.) without fall.
修理の際は、必ず取扱説明書を準備し操作方法を確認の上作業を行ってください。

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PCS 87 469

model 74VP600

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Parts for your **MARANTZ** equipment are generally available to our National Marantz Subsidiary or Agent.

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Parts can be ordered either by mail or by Fax.. In both cases, the correct part number has to be specified.

The following information must be supplied to eliminate delays in processing your order:

1. Complete address
2. Complete part numbers and quantities required
3. Description of parts
4. Model number for which part is required
5. Way of shipment
6. Signature: any order form or Fax. must be signed, otherwise such part order will be considered as null and void.

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営業本部 〒 **150** 東京都渋谷区恵比寿南 **1** 丁目 **11** 番 **9** 号

SHOCK, FIRE HAZARD SERVICE TEST:

CAUTION: After servicing this appliance and prior to returning to customer, measure the resistance between either primary AC cord connector pins (with unit NOT connected to AC mains and its Power switch ON), and the face or Front Panel of product and controls and chassis bottom.

Any resistance measurement less than 1 Megohms should cause unit to be repaired or corrected before AC power is applied, and verified before it is return to the user/customer.

Ref. UL Standard NO.1492.

In case of difficulties, do not hesitate to contact the Technical Department at above mentioned address.

960514KI

1. TECHNICAL SPECIFICATIONS

A. General Spec.

LCD Panel	1.3' TFT Panel	:	Poly Silicon TFT
	Number of pixels	:	174.000 pixels on NTSC
		:	184.500 pixels on PAL
	Pixel configuration	:	Delta
Lamp	21V/150w Harogen	:	Ave. Life = 300 hrs
Lens	Focal Length	:	50mm
	F Number	:	F = 1.9
Color system	Multi	:	PAL/SECAM/NTSC
Inputs	Video - 1	:	Cinch. Yellow
	Video - 2	:	Cinch. Yellow
	S-Video	:	S-Connector
	Mains AC	:	2-pin Standard
Controls	Power On/Off	:	Wave Switch
	Standby	:	Tact
	Mode	:	Tact (Vol/Bri/Col/Tin/Mask)
	Mode up	:	Tact
	Mode down	:	Tact
	Mask side	:	Tact (16:9/21:9/Off)
	(Remote Control)	:	(Power on/off, Mute, Mode, Mode up/down, Vol up/down)
Opticals	Light Output	:	>70 Lux at center of 40'
			(Normally white condition)
	Distance	:	1.6m for 40'
		:	2.4m for 60'
		:	4.0m for 100'
Power Consumption		approx. 195W	
Dimension		280(W) x 207(H) x 92(D)mm	
Weight		approx. 4.8Kg	
Mains Input		115/230V, 50/60Hz	
Mains Cable		2m with 2-pin plug	
Safety		UL-1492/EN-60065	

B. Electrical Spec.

B-1. Chroma Part:

	Nominal	Limit	Unit
1. Acc figure of merit	–28	–26	dB
2. Color killer level	–35	–30	dB
3. Color control range (from center)	±30	—	%
4. Bright control with 10 stair step			
(min)	6/10	± 1	STEP
(max)	1/7	± 1	STEP
5. APC pull-in range (PAL)	± 500	± 300	Hz
(NTSC)	± 500	± 300	Hz

B-2. Optical Part:

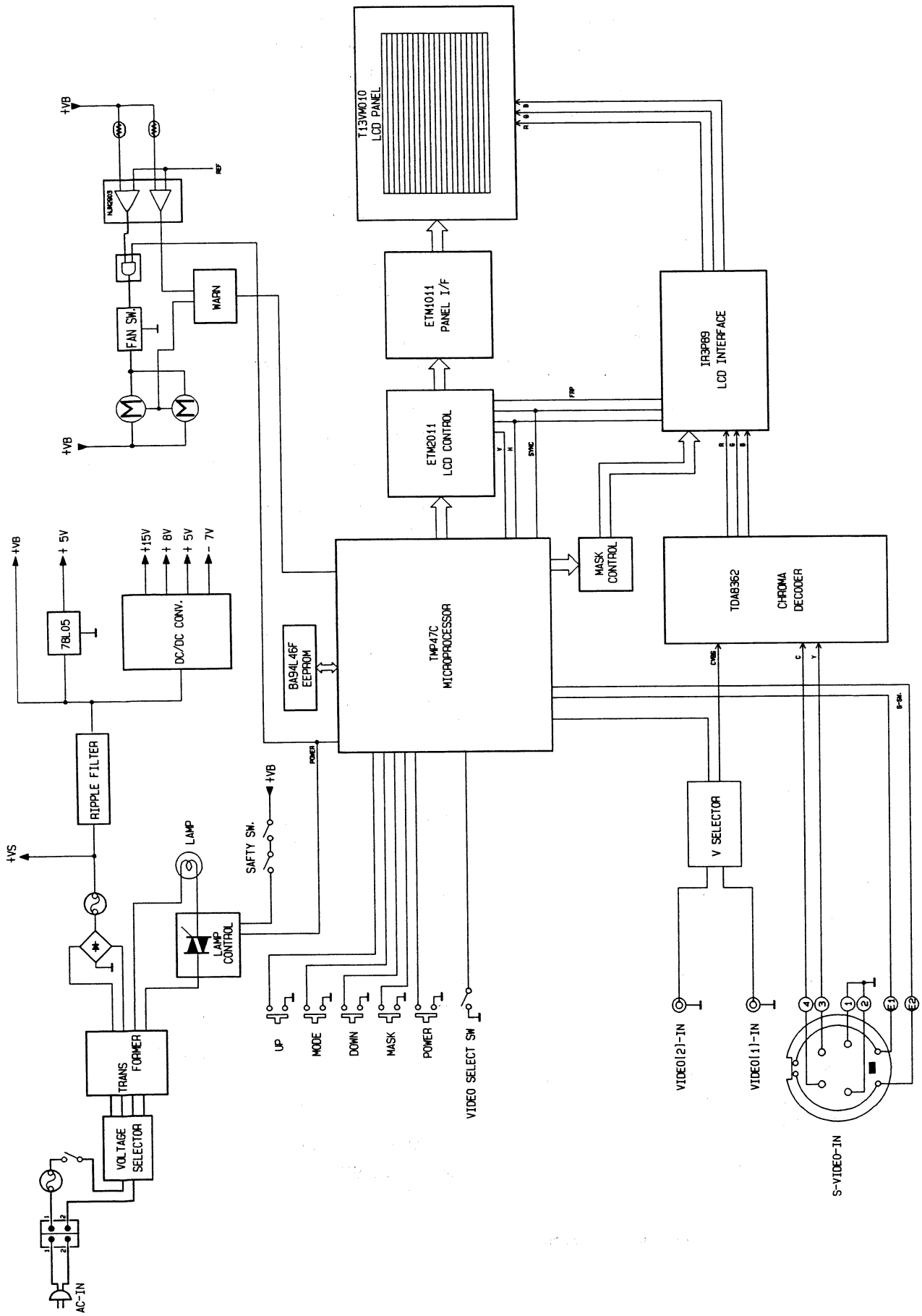
1. Light output at center of 40'	70	60	Lux
2. LCTCR (Luminance Center To Corner Ratio)	25	15	%
3. Projection Distance for 40'	1.6	—	m

B-3. Other Spec.

1. Power consumption	AC 115/230V 195W ± 30W
2. Operating Voltage	Mains input 115/230V ± 10 %
3. Operating Temperature	0 to 35°C

Specifications subject to change without prior notice.

2. BLOCK DIAGRAM



3. FUNCTIONAL DESCRIPTION

1. VIDEO SIGNAL PROCESSING

The video signal from external is selected by MM1117 (IC81), and enter in TDA8362 (IC82).
There is the priority for Input, as follows;

1. VIDEO-2
2. S-VIDEO
3. VIDEO-1

The video signal is decoded by TDA8362 (IC82) / TDA4665 (IC83) / TDA4665 (IC83) only SECAM), the RGB signals get out. The control of the color level and hue level (only NTSC) is done by TDA8362 (IC82).
The RGB signals are changed the alternative signal each horizontal line by IR3P89 (IC86) and supply for LCD display.
The control of the brightness is done by this.

2. SYNC SIGNAL PROCESSING

The SYNC signal is taken out from the input video signal by the SYNC separator in IR3P89 (IC86)
ETM2011 (IC91) makes the master clock signal and the horizontal and vertical SYNC signal for other block.
TDA8362 makes the Sand-Castle signal by itself and supply for TDA4665 and TDA8395.
ETM2011 (IC91) makes the horizontal and vertical sift clocks for LCD display by the control signals from ETM2011.

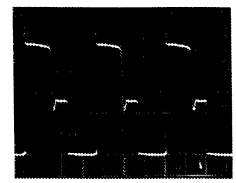
3. MICROPROCESSOR BLOCK

TMP47C634F (IC61) is the microprocessor.
Its main functions are as follows;

- Setting up Color system
- Setting up Brightness / Color / Hue (only NTSC)
- Setting up Picture masking ON / OFF and its position
- On screen display
- Detect of dangerous (high temperature or stopping of cooling fan)

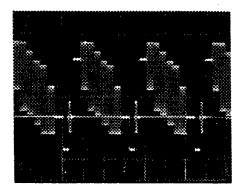
4. POWER SUPPLY BLOCK

The mains power is selected by the voltage select switch (S110) and supply after rectification and regulation.
There is the switching regulator for the video signal processing block.
Power supply for the Lamp is done through AC125DSM (IC04).
The voltage for Lamp is suppressed when the input voltage is higher than rated voltage.



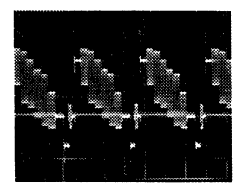
Point : Collector of Q154
H : 2 µs / Div
V : 5 V / Div

Point : 18 pin of IC82
H : 20 µs / Div
V : 500 mV / Div

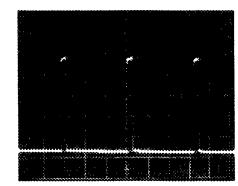


Point : TP82
H : 20 µs / Div
V : 200 mV / Div

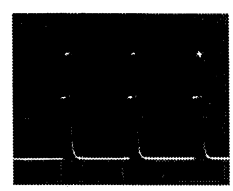
Point : TP8C
H : 20 µs / Div
V : 2 V / Div



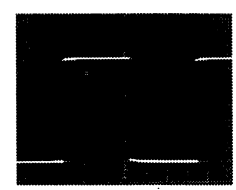
Point : 15 pin of IC82
H : 20 µs / Div
V : 200 mV / Div



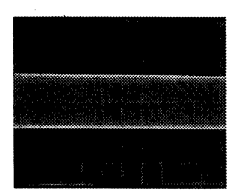
Point : 40 pin of IC91
H : 20 µs / Div
V : 1 V / Div



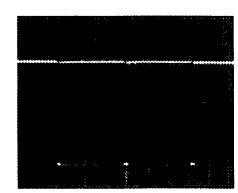
Point : 38 pin of IC82 (TDA8362)
H : 20 µs / Div
V : 1 V / Div



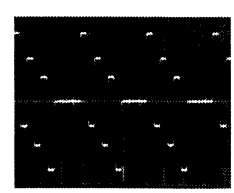
Point : 36 pin of IC91
H : 20 µs / Div
V : 1 V / Div



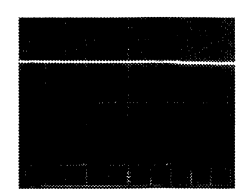
Point : 32 pin of IC82
H : 20 µs / Div
V : 100 mV / Div



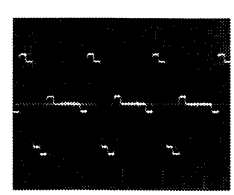
Point : 20 pin of IC91
H : 20 µs / Div
V : 1 V / Div



Point : 28 pin of IC82
H : 20 µs / Div
V : 200 mV / Div

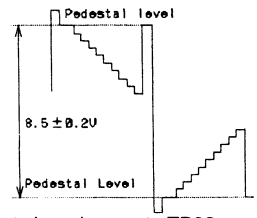
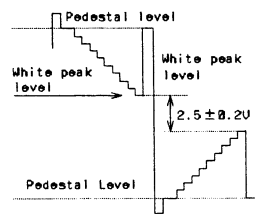


Point : 21 pin of IC91
H : 5 ms / Div
V : 1 V / Div

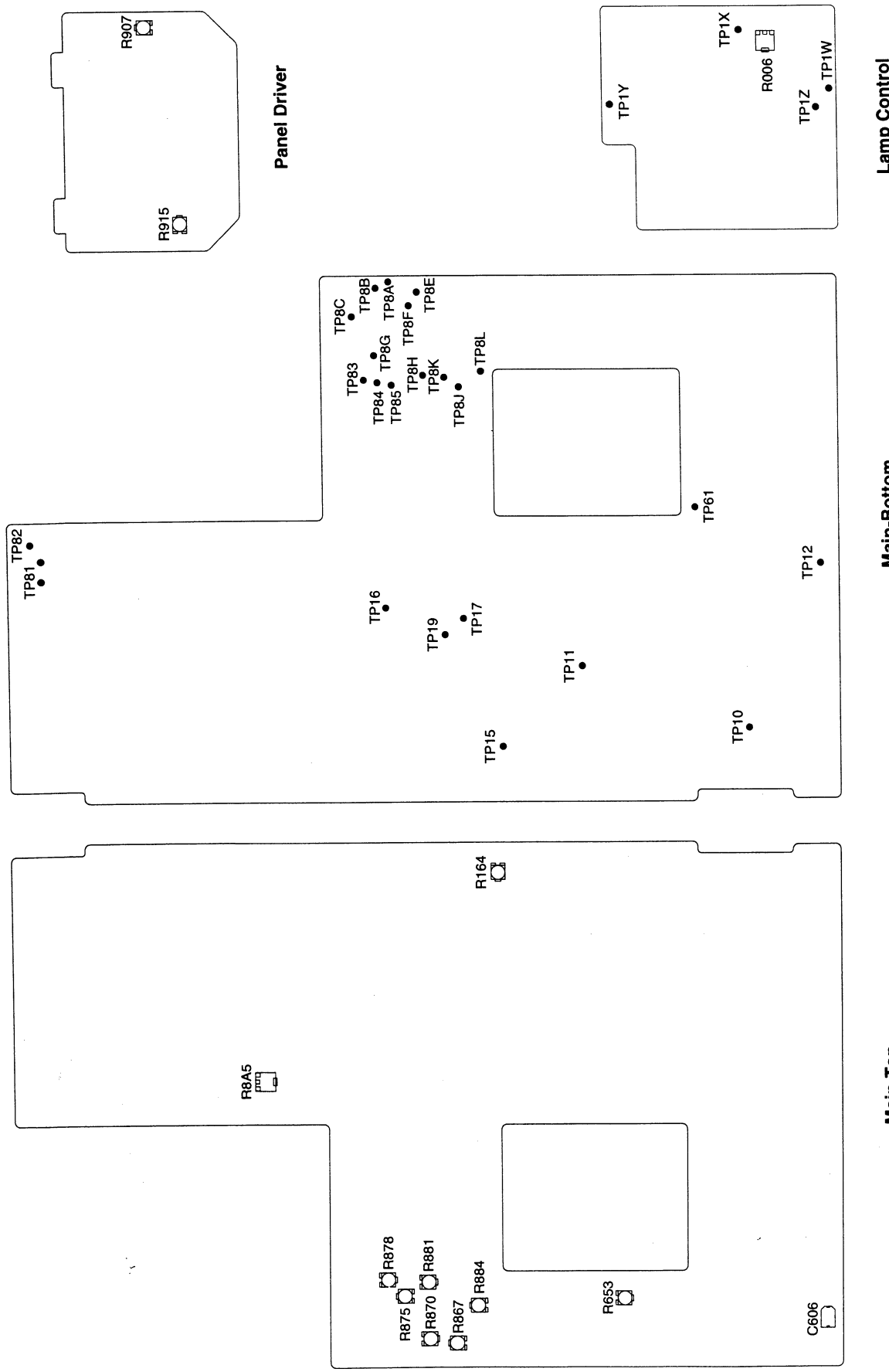


Point : 29 pin of IC82
H : 20 µs / Div
V : 200 mV / Div

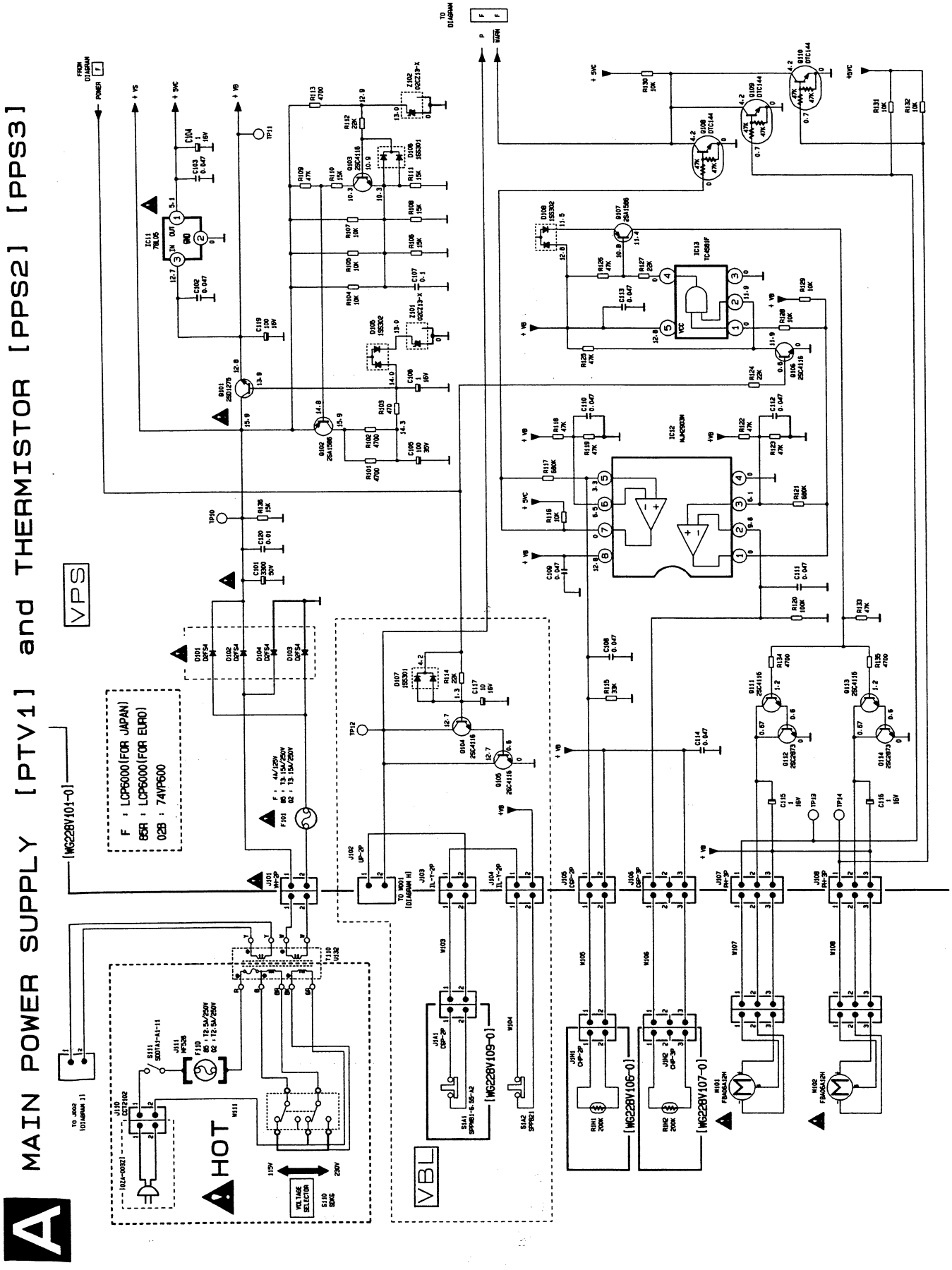
4. ADJUSTMENT PROCEDURE

(Item)	(Preparation)	(Adjustment)
1. 8.0V Power Supply (R164)	: Supply DC +15.0 ±1.0v to TP10. : Connect a DC voltmeter to TP16.	a) Adjust R164 so that the voltage becomes to 8.2 ±0.05V.
2. Video Contrast (Rough Adjustment) (R8A5)	: Supply a 10-stair-steps signal without chrominance to TP82. : Connect a DC voltmeter to TP8L.	a) Adjust R8A5 so that the voltage becomes to 1.8 ±0.05V.
3. r-1 Rectification (Rough Adjustment) (R875)	: Supply a 10-stair-steps signal without chrominance to TP82. : Set the Bright control to center : Connect a DC voltmeter to TP8G.	a) Adjust R875 so that the voltage becomes to 0 ±0.1V.
4. r-2 Rectification (R878)	: Supply a 10-stair-steps signal without chrominance to TP82. : Set the Bright control to center : Connect a DC voltmeter to TP8H. 	a) Adjust R878 so that the voltage becomes to 0.85 ±0.01V.
5. r-1 Rectification (Accurate Adj.) (R875)	: Supply a 10-stair-steps signal without chrominance to TP82. : Set the Bright control to center : Connect an oscilloscope to TP8B. (Set DC. and 2V/div range) 	a) Adjust R875 so that the voltage between each pedestal level witch are alternated each line becomes to 8.5 ± 0.2V.
6. Video Contrast (Accurate Adj.) (R8A5)	: Supply a 10-stair-steps signal without chrominance to TP82. : Set the Bright control to center : Connect an oscilloscope to TP8B. (Set DC. and 2V/div range)	a) Adjust R8A5 so that the voltage between each white peak level witch are alternated each line becomes to 2.5 ± 0.2V.
7. White Balance for Red (R881, R884)	: Supply a 10-stair-steps signal without chrominance to TP82. : Set the Bright control to center : Connect an oscilloscope to TP8B (to 1ch) and TP8A (to 2ch). (Set DC. and 2V/div range)	a) Adjust R881 so that the pedestal level of TP8A becomes to the same as TP8B. b) Adjust R884 so that the amplitude of TP8A becomes to the same as TP8B. c) Repeat a) and b).
8. White Balance for Blue (R881, R884)	: Supply a 10-stair-steps signal without chrominance to TP82. : Set the Bright control to center : Connect an oscilloscope to TP8B (to 1ch) and TP8C (to 2ch). (Set DC. and 2V/div range)	a) Adjust R870 so that the pedestal level of TP8C becomes to the same as TP8B. b) Adjust R867 so that the amplitude of TP8A becomes to the same as TP8B. c) Repeat a) and b).
9. Picture Position (R907)	: Supply a PHILIPS-Pattern signal to TP82. : Display to screen.	a) Adjust R907 so that the Picture is located at the center of screen. b) Confirm that the Border Castellation signal to be visible even NTSC.
10. OSD Position (vertical) (R653)	: Supply a PHILIPS-Pattern signal to TP82. : Display to screen. : Switch on the MASK button to 16:9 or 21:9 : Set the number of count for MASK-position to center.	a) Adjust R653 so that the MASK is located at the center of screen.
11. OSD Position (Horizontal) (C606)	: Supply a PHILIPS-Pattern signal to TP82. : Display to screen.	a) Adjust C606 so that the word locate to the center of picture.
12. LCD Common Electrode (R867)	: Supply a 10-stair-steps signal without chrominance to TP82.	a) Adjust rough R915 so that the contrast becomes to maximum. b) Adjust R915 so that the Horizontal line disappear when you shake the body to up and down.
13. Lamp Voltage (R006)	: Connect an Halogen-Lamp (21v/150w) or 220 ohm load which is larger than 22 wattage to J002. : Connect a DC voltmeter to TP1W (–) and TP1X (+) : Supply AC 22.0 ± 0.1V to J001. : Supply DC 12.0 ± 0.5V to J003. (J003 : NO.1 = (+), NO.2 = (–))	a) Adjust R006 so that the voltage becomes to 2.75 ± 0.05V.

5. ADJUSTMENT POINTS

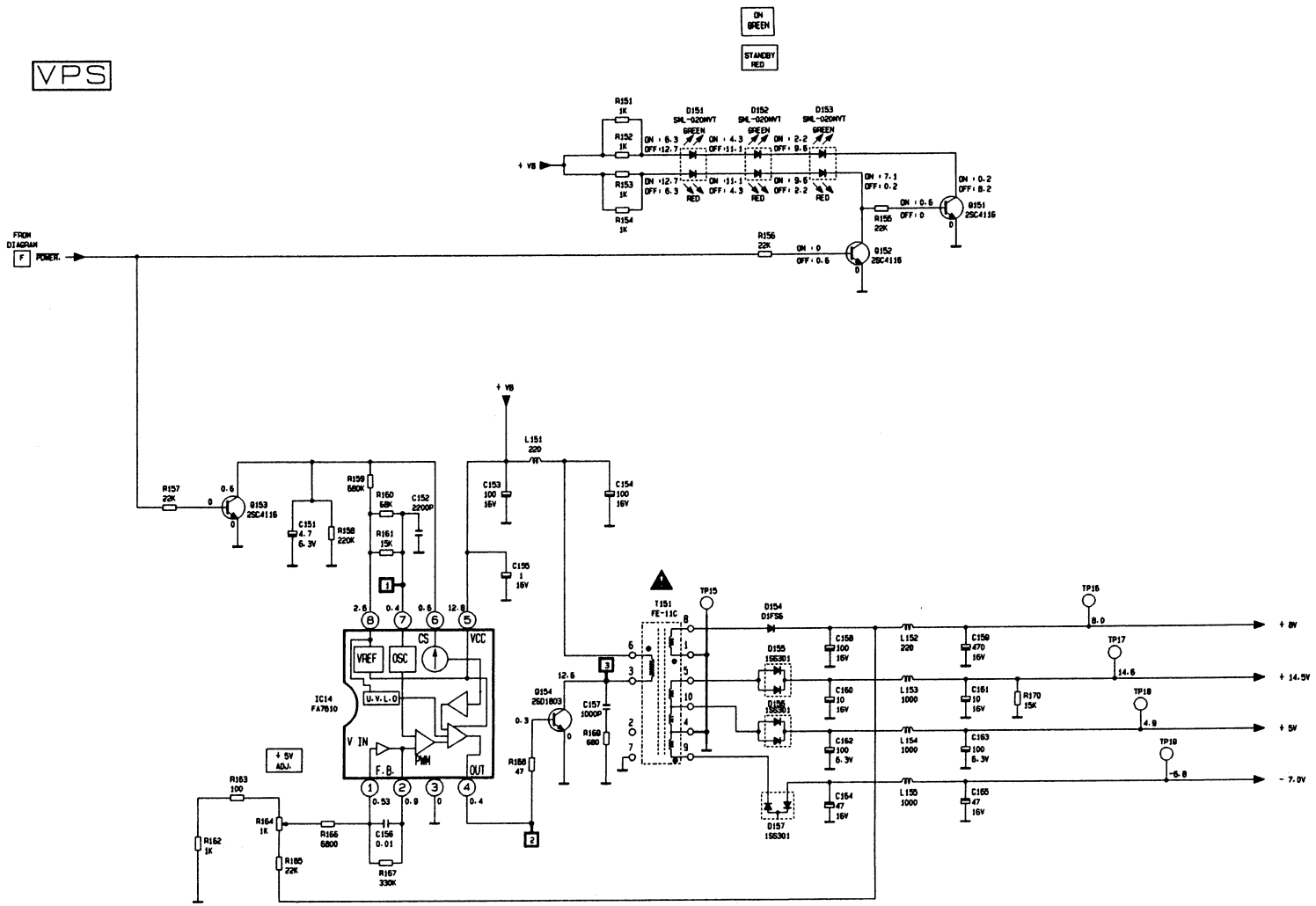


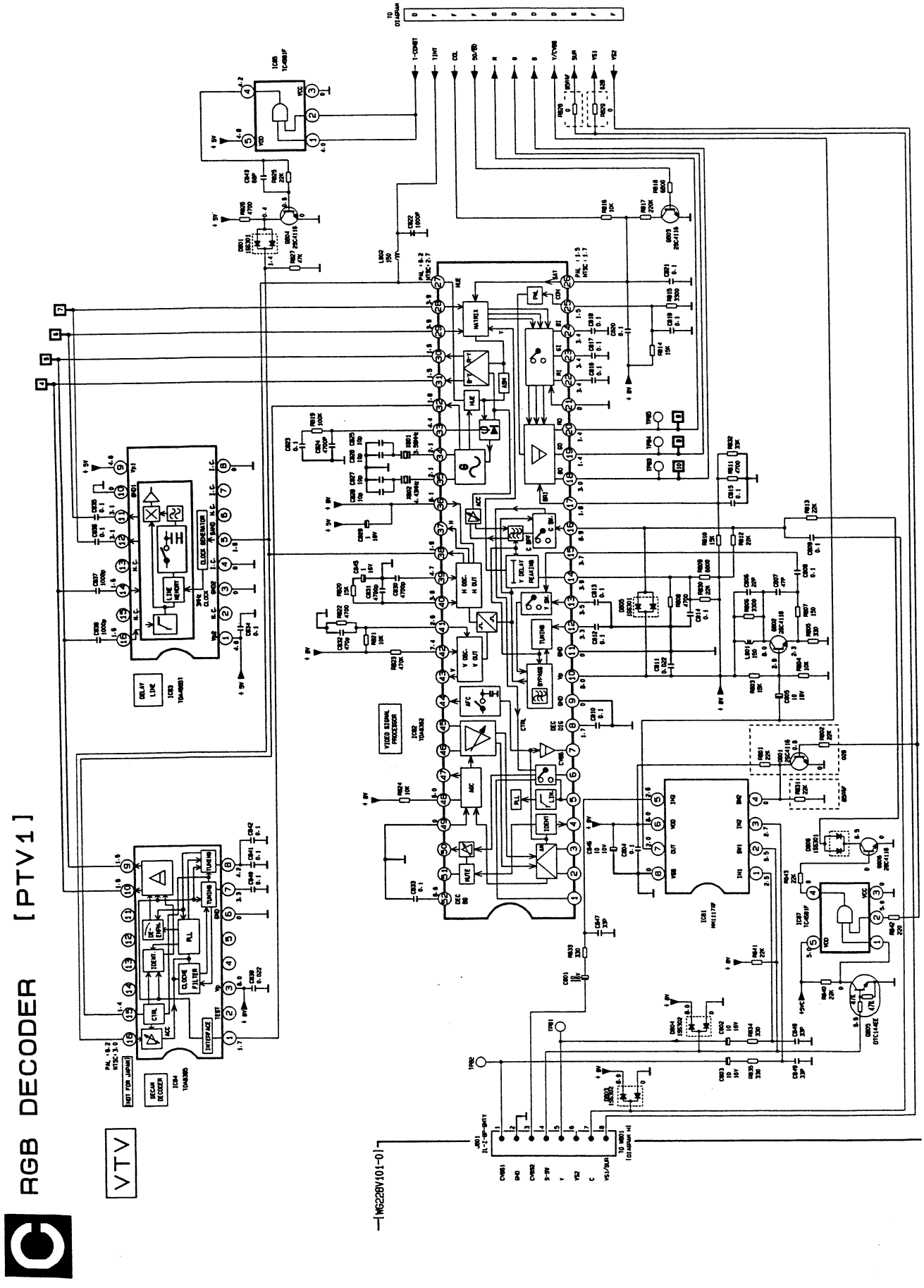
6. SCHEMATIC DIAGRAM AND PARTS LOCATION



B POWER SUPPLY [PTV1]

VPS

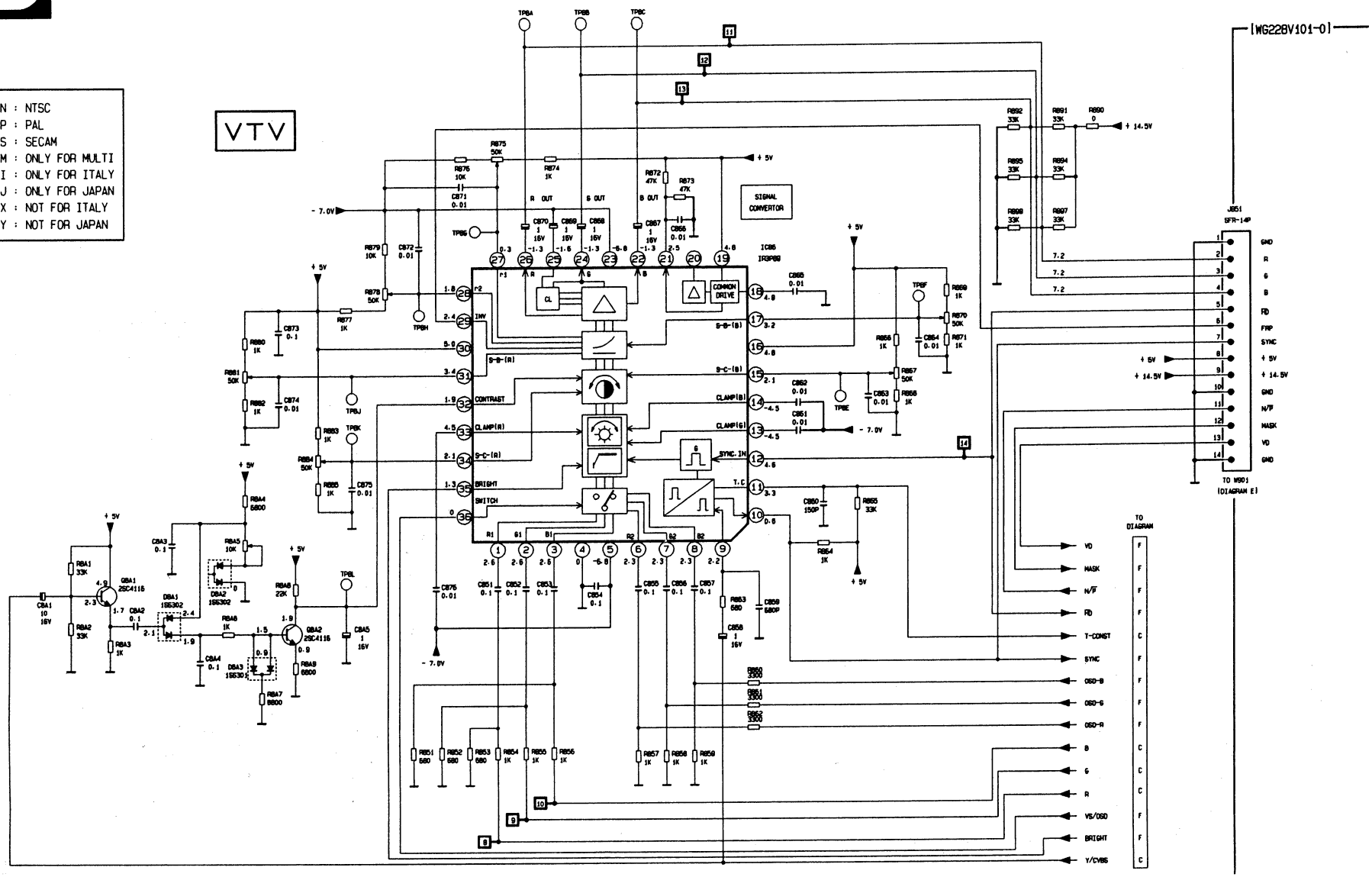



RGB DECODER [PTV1]
VTV
MSG2801V101-0

D CHROMA DECODER [PTV1]

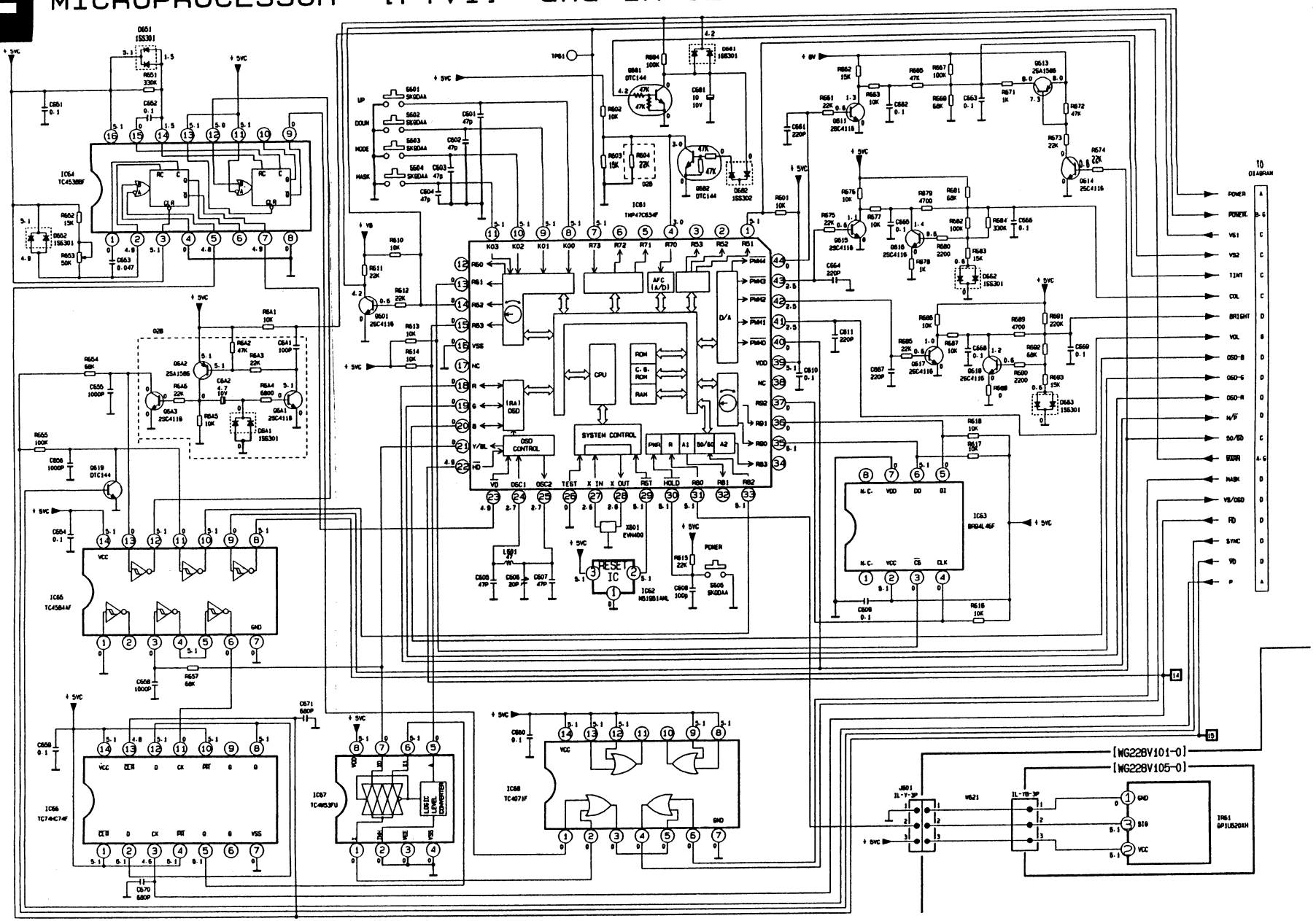
N : NTSC
P : PAL
S : SECAM
M : ONLY FOR MULTI
I : ONLY FOR ITALY
J : ONLY FOR JAPAN
X : NOT FOR ITALY
Y : NOT FOR JAPAN

VTV



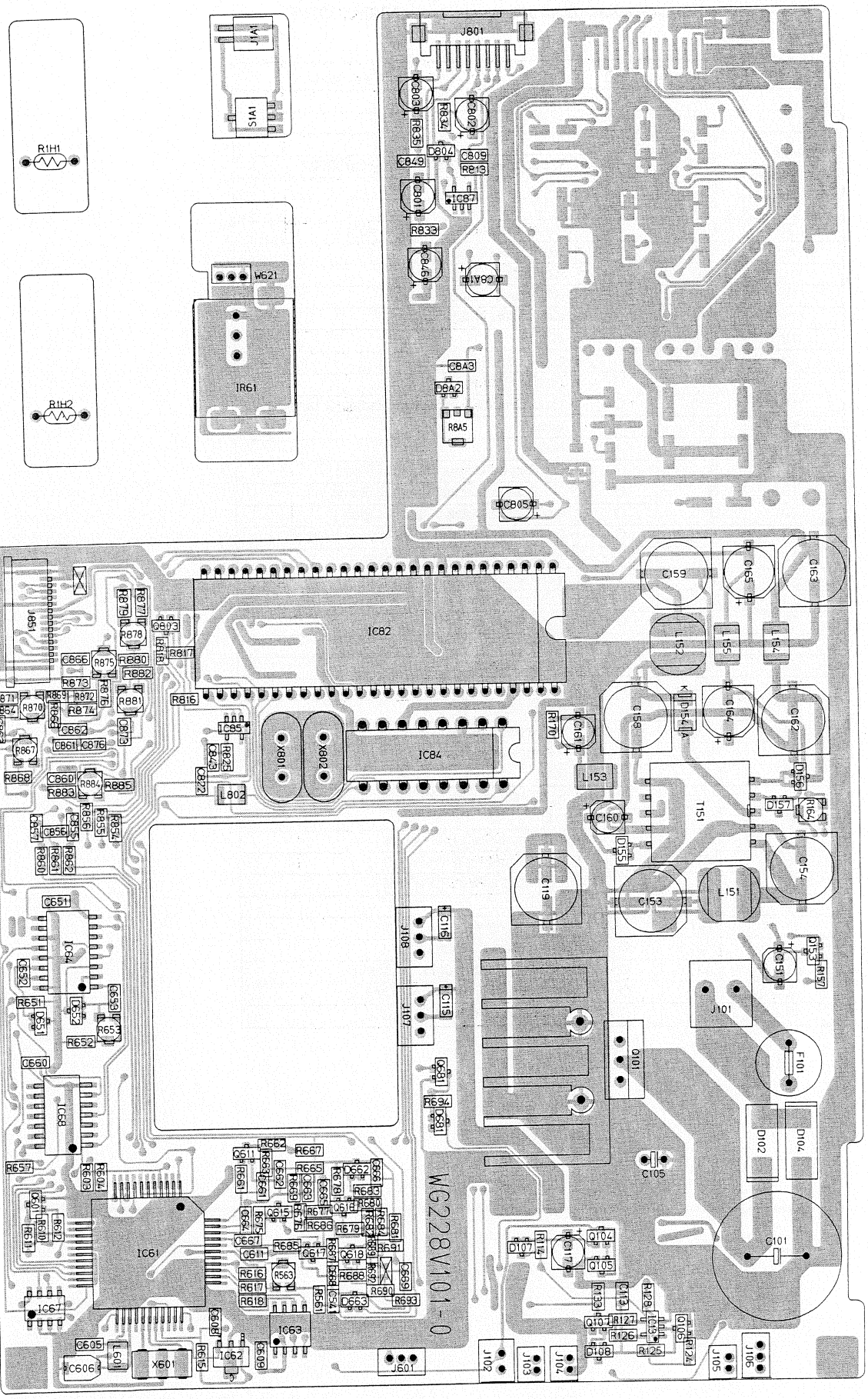
F MICROPROCESSOR [PTV1] and IR-SENSOR [PTT1]

VTT



*** Function / Description about Microprocessor TMP47C834F**

Pin No	Pin Name	I/O	Function / Description
1	R51	O	Video Input select
2	R52	-	N.C
3	R53	-	N.C
4	R70	I	Mode Select (74VP600 or LCP6000)
5	R71	-	N.C
6	R72	-	N.C
7	R73	I	Key Input for Video input select
8	K00	I	Key input ("Up" key)
9	K01	I	Key input ("Down" key)
10	K02	I	Key input ("Mode" key)
11	K03	I	Key input ("Mask" key)
12	R60	-	N.C
13	R61	O	Strobe signal to EEP-ROM
14	R62	O	Power ON/OFF Control
15	R63	O	OSD select (On Screen Display or Masking)
16	VSS	-	GND
17	N.C	-	N.C
18	R	O	On Screen Display output (Red)
19	G	O	On Screen Display output (Green)
20	B	O	On Screen Display output (Blue)
21	Y/BL	O	On Screen Display and Masking control
22	HD	I	Horizontal SYNC signal input
23	VD	I	Vertical SYNC signal input
24	OSC1	I	Timing Generator input
25	OSC2	O	Timing Generator output
26	TEST	I	Internal Test
27	XIN	I	Clock generator input
28	XOUT	O	Clock generator output
29	RESET	I	Reset input
30	HOLD	I	Key input ("Power" key)
31	R80	I	Remote control signal input
32	R81	-	N.C
33	R82	I	SYNC signal detector input
34	R83	-	N.C
35	R90	I	Deta input from EEP-ROM
36	R91	O	Deta output for EEP-ROM
37	R92	O	Clock output for EEP-ROM
38	N.C	-	N.C
39	VDD	-	Power supply
40	R40	O	SYNC detector output
41	R41	O	Volume control output (P.W.M.)
42	R42	O	Bright control output (P.W.M.)
43	R43	O	Color control output (P.W.M.)


WG228V101-0
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IC68
IC67
IC63
IC62
IR61
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R1H2
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J1A1
W621
J801
J851
J108
J107
J101
J102
J103
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J601
X601
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C849
C8A1
C8A3
D8A2
R8A5
D604
R813
R833
R834
R835
IC87
D102
D104
D151
D152
D153
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D157
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R125
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R128
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R170
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Q6Y5
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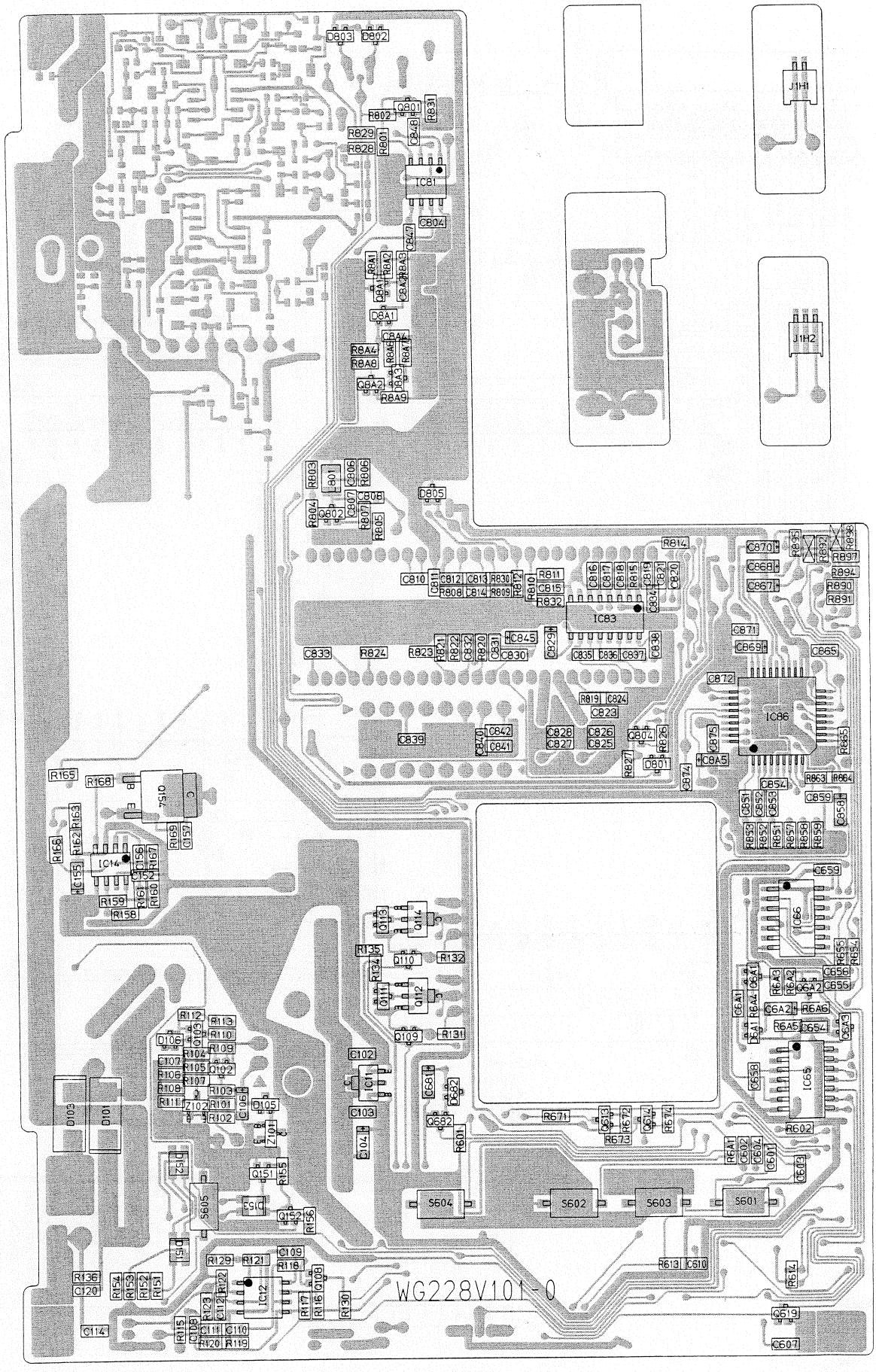
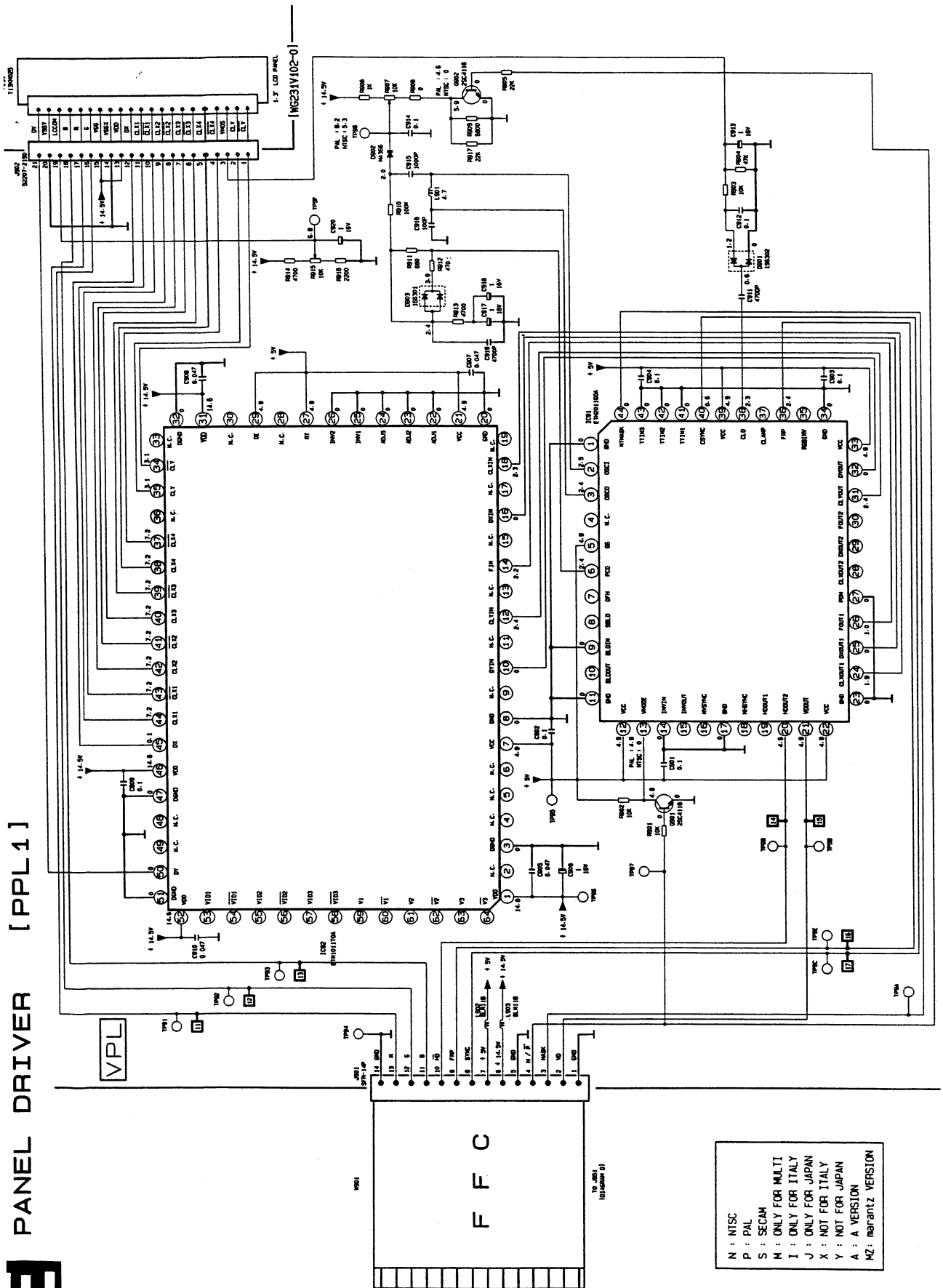
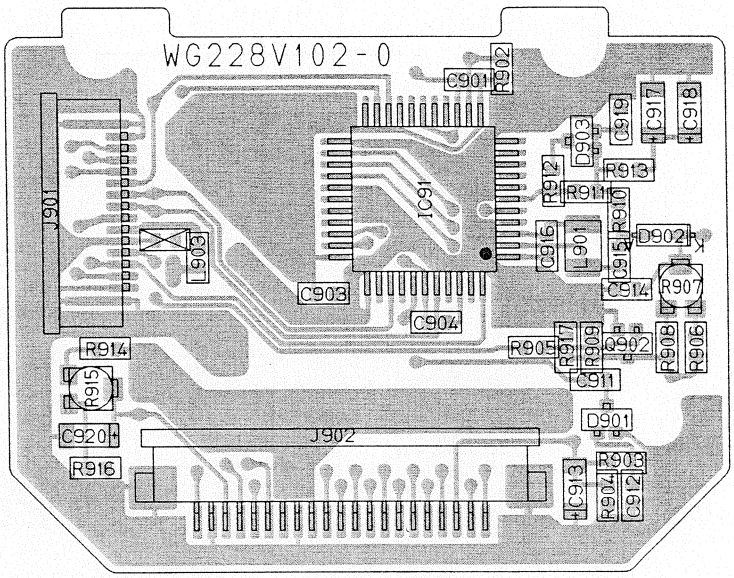
Q6Z9


WG228V101-0

PANEL DRIVER [PPL1]

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C901
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C919
C917
C918
D903
R912
R913
R911
R910
IC91
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L903
C916
L901
D902
C915
C914
R907
C903
C904
R914
R905
R917
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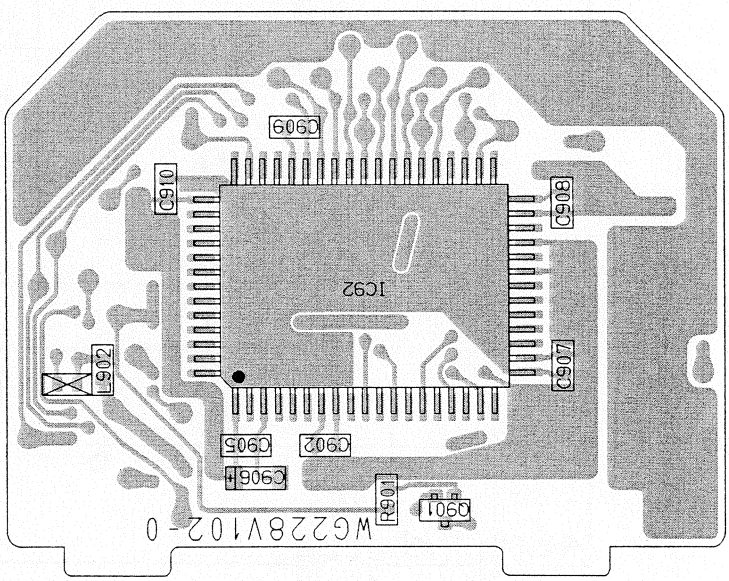
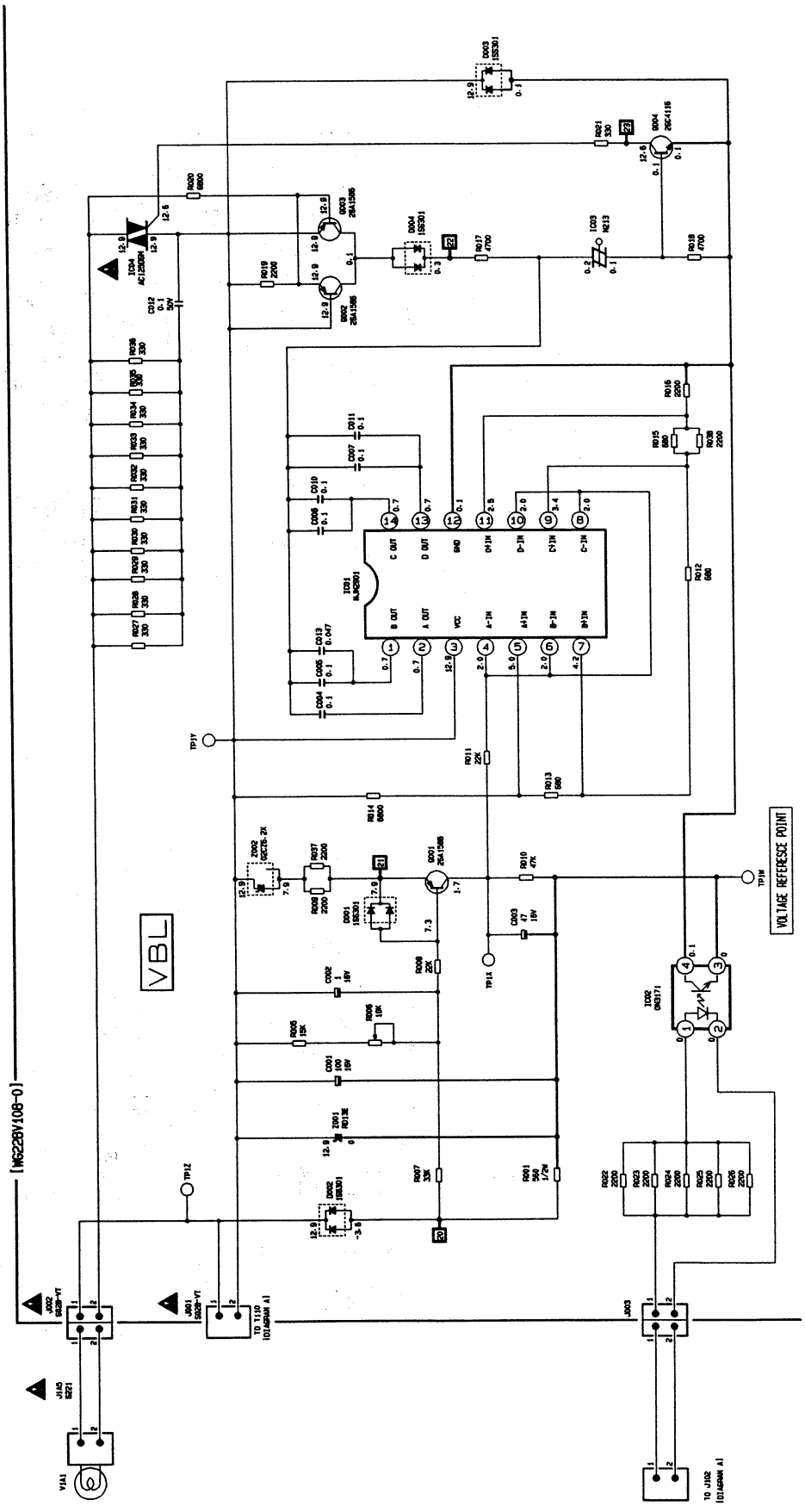
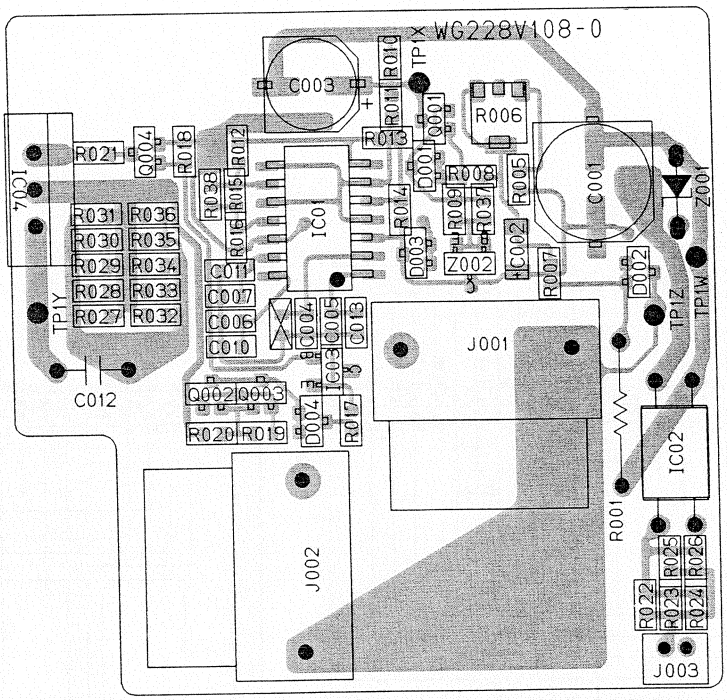
R903
R904
C913
C912


C909
C910
C908
IC92
L902
C907
C905
C902
C906
R901
D901
WG228V102-0

LAMP CONTROLLER [PBL1]
& MIC INPUT [PIO3]




WG228V108-0
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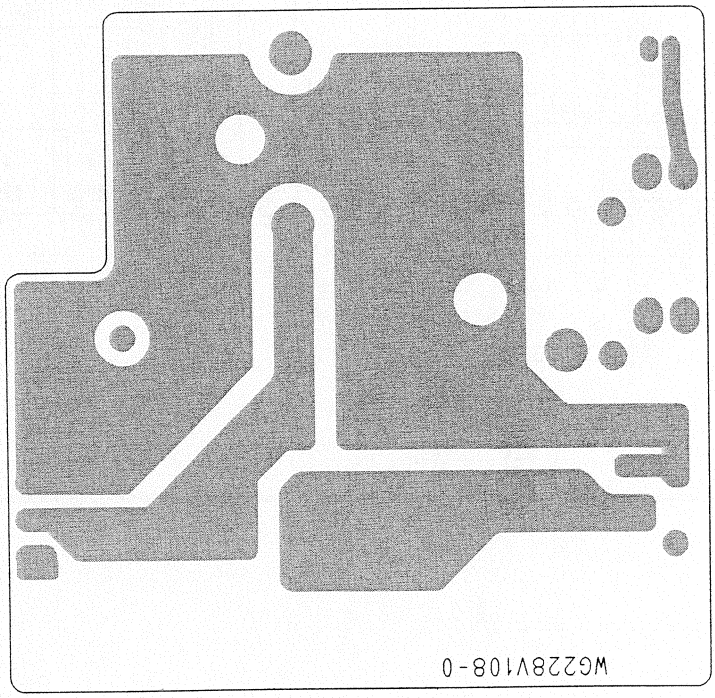
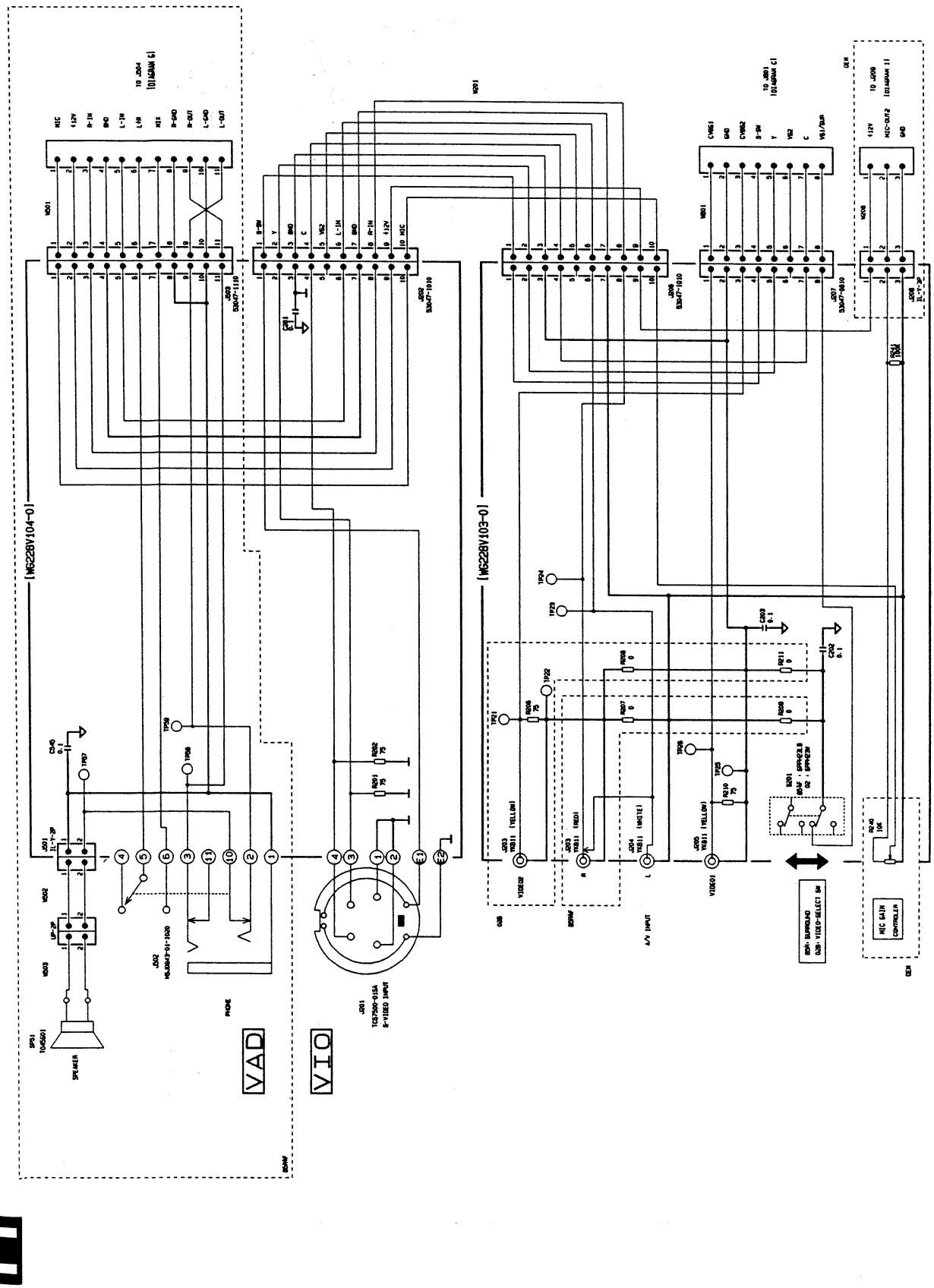
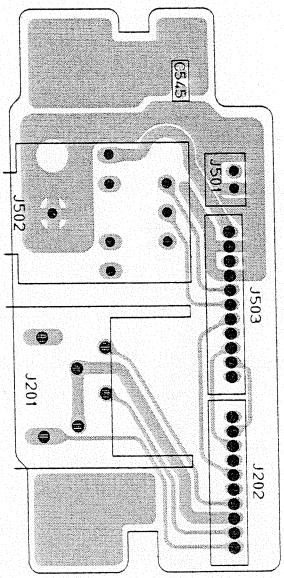
C003
R011
R010
R006
R013
D001
R009
R037
R005
C001
Z001
R021
Q004
R018
R012
R038
R015
R016
IC01
R014
D003
Z002
C002
R007
D002
R031
R036
R030
R035
R029
R034
R028
R033
R027
R032
TP1Y
C011
C009
C006
C010
C004
C005
C013
C003
J001
TP1Z
TP1W
C012
Q002
Q003
D004
R017
R020
R019
IC02
R001
J002
R022
R023
R024
R025
R026
J003


WG228V108-0

AV I/O and SPEAKER CONNECTION [PIO1] [PAD1]

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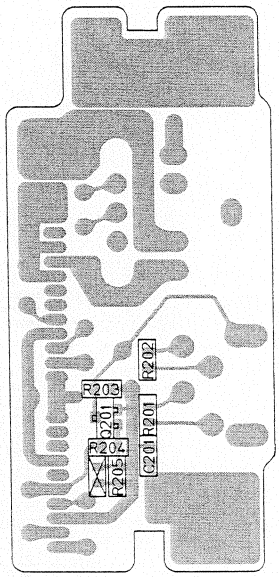
J502
J503
J201
J202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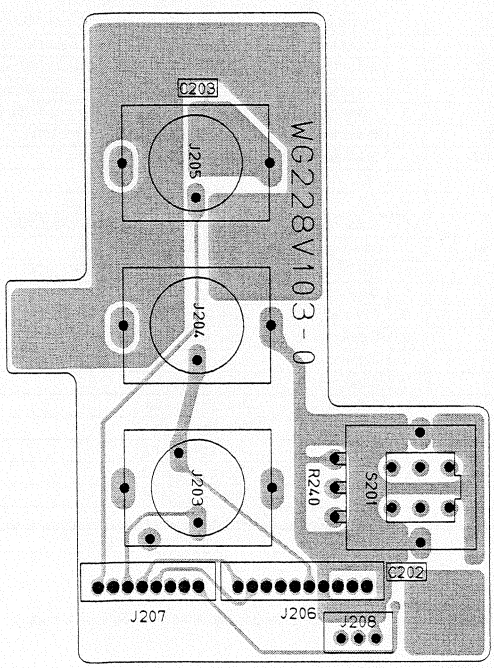
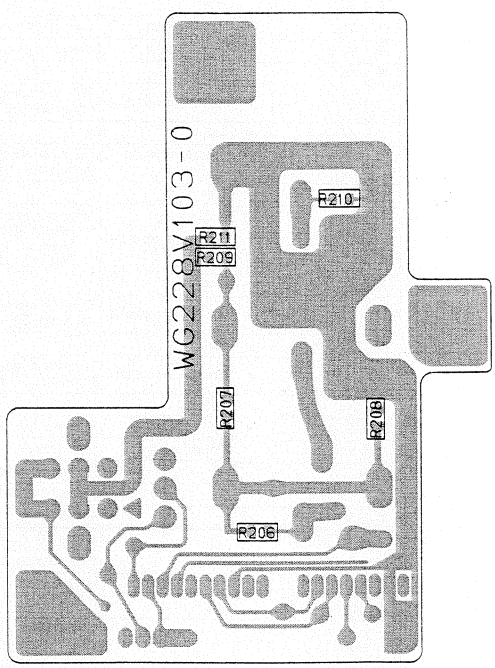
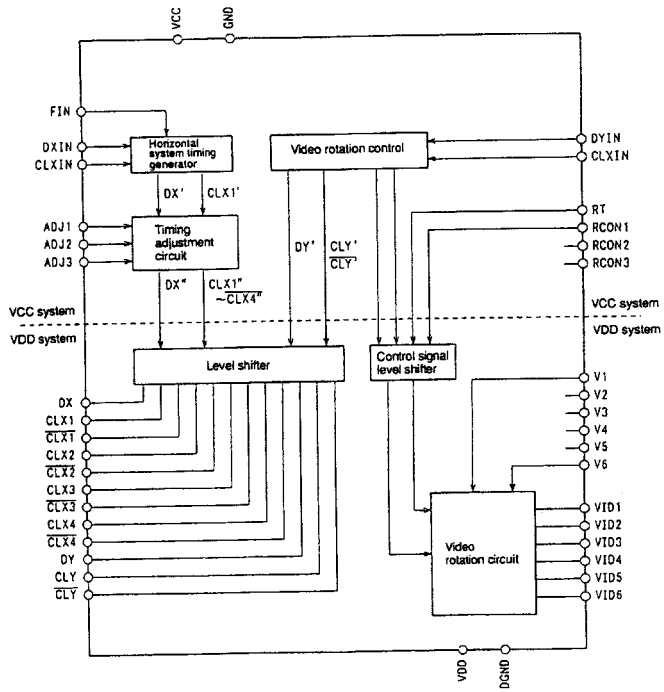
R202
C201
R201
R204
R205


C203
J205
WG228V103-0
J204
J203
R240
S201
C202
J207
J206
J208


WG228V103-0
R210
R211
R209
R207
R208
R206

ET1011TOA



No.	Pin	I/O	Connection	Description
1	VDD	–	Power supply	High voltage system power supply (+14 to +17V)
2	NC	–	Idle	
3	DGND	–	Power supply	Ground of high voltage system
4	NC	–	Idle	
5	NC	–	Idle	
6	NC	–	Idle	
7	VCC	–	Power supply	Logic system power supply (+5V TYP)
8	GND	–	Power supply	Ground of logic system power supply
9	NC	–	Idle	
10	DYIN	I	Input from control IC	TFT panel Y-direction shift data input (for making DY)
11	NC	–	Idle	
12	CLYIN	I	Input from control IC	TFT panel Y-direction transfer clock input (for making CLY, $\overline{CLY}$)
13	NC	–	Idle	
14	FIN	I	Input from control IC	Reference delay signal • Creates a 8-phase X-direction transfer clock by delaying 1/2fFIN taking CLXIN as a reference. • Synchronizes DX (falling edge trigger).
15	NC	–	Idle	
16	DXIN	I	Input from control IC	TFT panel X-direction shift data input (for making DX)
17	NC	–	Idle	
18	CLXIN	I	Input from control IC	TFT panel X-direction transfer clock input (for making CLXi)
19	NC	–	Idle	
20	GND	–	Power supply	Ground of logic system power supply
21	VCC	–	Power supply	Logic system power supply (+5V TYP)
22	ADJ1	I		TFT panel X-direction timing adjustment input 1
23	ADJ2	I		TFT panel X-direction timing adjustment input 2
24	ADJ3	I		TFT panel X-direction timing adjustment input 3
25	RCON1	I		Video rotation control input 1
26	RCON2	I		Video rotation control input 2
27	RCON3	I		Video rotation control input 3
28	NC	–	Idle	
29	RT	I		Video rotation mode switching input Low : 6-channel video rotation High : 6-channel video rotation (external control), 3-channel video rotation
30	NC	–	Idle	
31	VDD	–	Power supply	High voltage system power supply (+14 to +17V)
32	DGND	–	Power supply	Ground of high voltage system
33	NC	–	Idle	
34	$\overline{CLY}$	O	Output to panel	TFT panel Y-direction transfer clock (VDD system)

No.	Pin	I/O	Connection	Description
35	CLY	O	Output to panel	TFT panel Y-direction transfer clock (VDD system)
36	NC	–	Idle	
37	$\overline{CLX4}$	O	Output to panel	TFT panel X-direction transfer clock (VDD system)
38	CLX4	O	Output to panel	TFT panel X-direction transfer clock (VDD system)
39	$\overline{CLX3}$	O	Output to panel	TFT panel X-direction transfer clock (VDD system)
40	CLX3	O	Output to panel	TFT panel X-direction transfer clock (VDD system)
41	$\overline{CLX2}$	O	Output to panel	TFT panel X-direction transfer clock (VDD system)
42	CLX2	O	Output to panel	TFT panel X-direction transfer clock (VDD system)
43	$\overline{CLX1}$	O	Output to panel	TFT panel X-direction transfer clock (VDD system)
44	CLX1	O	Output to panel	TFT panel X-direction transfer clock (VDD system)
45	DX	O	Output to panel	TFT panel X-direction shift data output (VDD system)
46	VDD	–	Power supply	High voltage power supply (+14 to +17V)
47	DGND	–	Power supply	Ground of high voltage system
48	NC	–	Idle	
49	NC	–	Idle	
50	DY	O	Output to panel	TFT panel Y-direction shift data output (VDD system)
51	DGND	–	Power supply	Ground of high voltage system
52	VDD	–	Power supply	High voltage power supply (+14 to +17V)
53	VID1	O	Output to panel	Video signal output
54	VID2	O	Output to panel	Video signal output
55	VID3	O	Output to panel	Video signal output
56	VID4	O	Output to panel	Video signal output
57	VID5	O	Output to panel	Video signal output
58	VID6	O	Output to panel	Video signal output
59	V1	–		Video signal input 1
60	V2	–		Video signal input 2
61	V3	–		Video signal input 3
62	V4	–		Video signal input 4
63	V5	–		Video signal input 5
64	V6	–		Video signal input 6

* Set all test pin inputs to low.
* Open all non-connected output pins.
* GND and DGND are connected via a resistor within the chip. Be sure to supply them with the same voltage.

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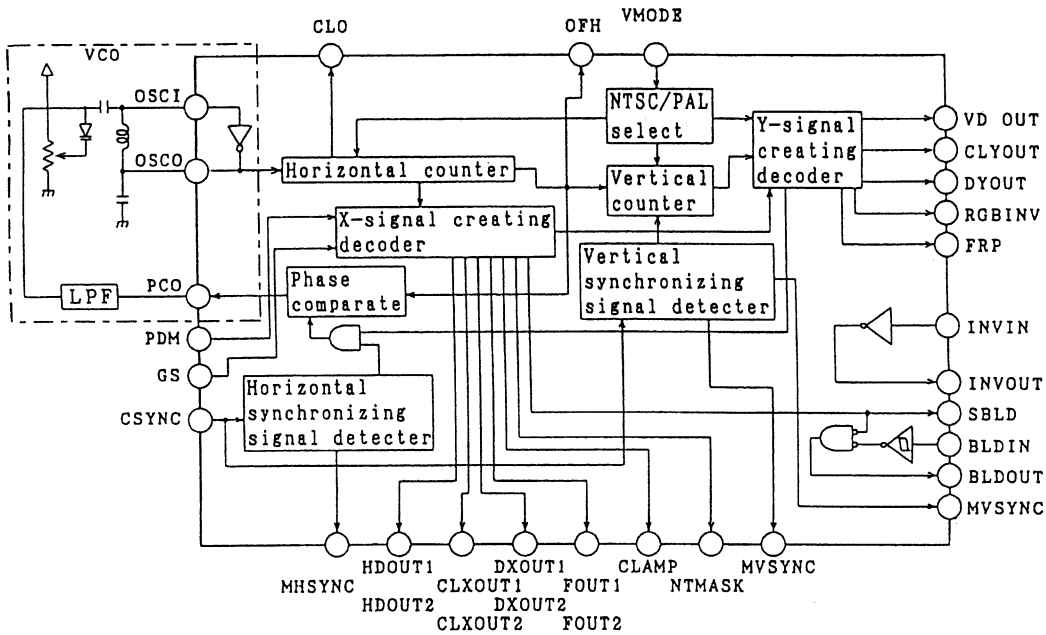
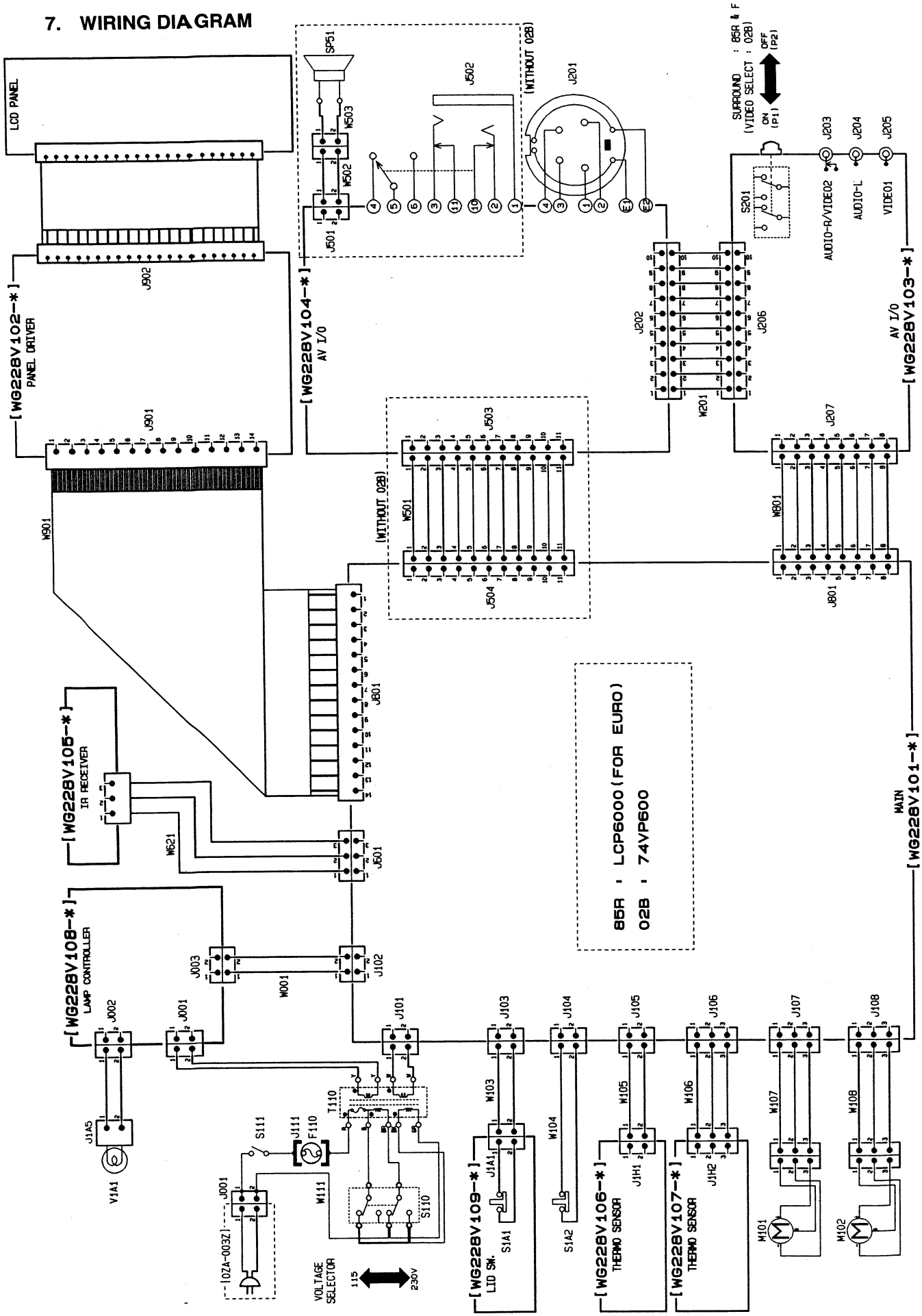


	Pin Name	I/O	Connection	Description
1	GND	–	Power supply	Logic power ground
2	OSCI	I	Input from VCO	Creating the reference frequency
3	OSCO	O	Output to VCO	Creating the reference frequency
4	NC	–	No Connection	
5	GS	I	connect to VCC	Pixel alignment select input
6	PCO	O	Output to VCO	Phase comparator output
7	OFH	O		Vertical count reference clock output
8	SBLD	O	Output to B/L unit	Back light drive synchronizing signal
9	BLD IN	I		Back light drive synchronizing signal (for varying the pulse width)
10	BLD OUT	O	Output to B/L unit	Back light drive synchronizing signal (for varying the pulse width)
11	GND	–	Power supply	Logic power ground
12	VCC	–	Power supply	Logic power supply (+5V)
13	VMODE	I		NTSC/PAL select input (NTSC: LOW, PAL: HIGH)
14	INVIN	I		INV input
15	INVOUT	O		INV output
16	MVSYNC	O		Vertical synchronizing signal (monitor)
17	GND	–	Power supply	Logical power ground
18	MHSYNC	O		Horizontal synchronizing signal (monitor)
19	HD OUT1	O		Horizontal synchronizing pulse 1
20	HD OUT2	O		Horizontal synchronizing pulse 2
21	VD OUT	O		Vertical synchronizing pulse
22	VCC	–	Power supply	Logic power supply (+5V)
23	GND	–	Power supply	Logic power ground
24	CLXOUT 1	O	Output to ETM1010	TFT panel X-transfer clock 1 (for T13KM010)
25	DXOUT 1	O	Output to ETM1010	TFT panel X-shift data output 1 (for T13KM010)

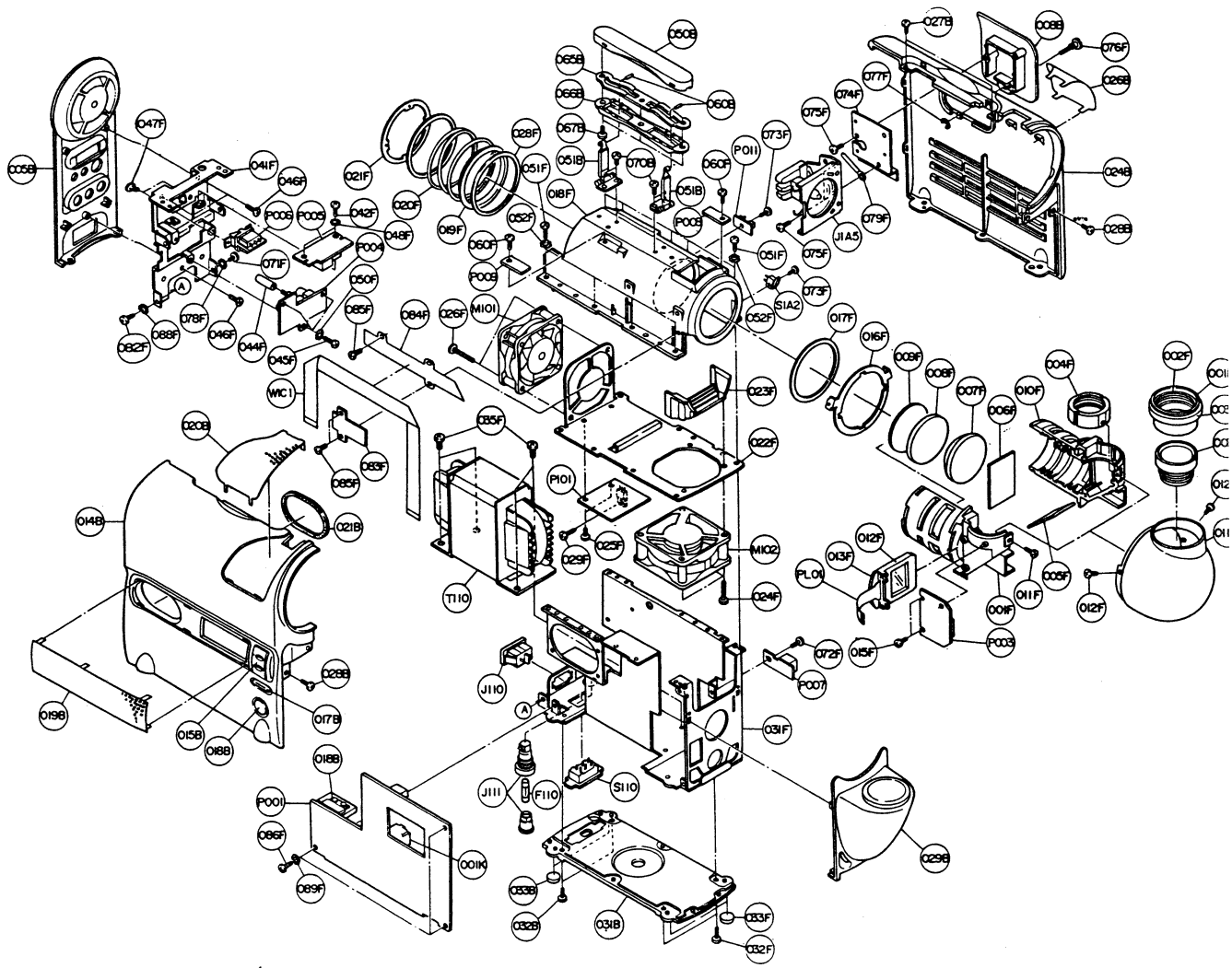
	Pin Name	I/O	Connection	Description
26	FOUT 1	O	Output to ETM1010	Standard delay signal 1 (for T13KM010)
27	PDM	I		Low-power consumption mode select input Normal mode: LOW Low-power consumption mode: HIGH
28	CLXOUT 2	O	Output to ETM1010	TFT panel X-transfer clock 2 (for T13KM020)
29	DXOUT 2	O	Output to ETM1010	TFT panel X-shift data output 2 (for T13KM020)
30	FOUT 2	O	Output to ETM1010	Standard delay signal 2 (for T13KM020)
31	CLYOUT	O	Output to ETM1010	TFT panel Y-transfer clock
32	DYOUT	O	Output to ETM1010	TFT panel Y-shift data output
33	VCC	–	Power supply	Logic power supply (+5V)
34	GND	–	Power supply	Logic power ground
35	RGB INV	O		1V inversion signal
36	FRP	O		1H inversion signal
37	CLAMP	O		Clamp pulse
38	CLO	O		Clock to generate negative power supply
39	VCC	–	Power supply	Logic power supply (+5V)
40	CSYNC	I		Composite synchronizing signal input
41	TTIN1	I		Test pin input 1
42	TTIN2	I		Test pin input 2
43	TTIN3	I		Test pin input 3
44	NTMASK	O		Signal for NTSC display masking

* Set the input of all test pins to LOW.
* Keep open all output pins that are not connected.
* CLXOUT1 and CLXOUT2 are kept in the Low level during the no-display period in Low power consumption mode.

7. WIRING DIAGRAM



8. EXPLODED VIEW AND PARTS LIST



POS. NO.	VERS. COLOR	PART NO. (PCS)	DESCRIPTION	PART NO. (MJI)
003B		4822 532 12428	RING, LENS KNOB	231V066110
005B		4822 426 10227	CASE, SIDE CASE F	231V064260
008B		4822 442 00459	LID, LAMP	231V257110
011B		4822 462 10774	CASE, CAP CASE C	231V064130
014B		4822 442 00457	CASE, MAIN CASE D	231V064240
015B		4822 410 10606	MODE BUTTON, CASE D	231V270210
016B		4822 410 10347	BUTTON, WIDE & POWER K	231V270510
019B		4822 442 00452	PUNCHING(F), CASE D	231V003110
023B		4822 442 00458	CASE K, MAIN CASE E	231V064560
026B		4822 442 00453	PUNCHING, CASE D	231V003120

POS. NO.	VERS. COLOR	PART NO. (PCS)	DESCRIPTION	PART NO. (MJI)
029B		4822 442 00455	CASE, SIDE CASE G	231V064170
031B		4822 442 00456	CASE, BOTTOM CASE H	231V064180
033B		4822 462 42229	LEG	231V057010
050B		4822 442 00454	HANDLE COVER	231V053120
051B		4822 417 11315	HANDLE HINGE K	231V160520
066B		4822 460 11053	FOR HANDLE BOTTOM	231V053150
001F		4822 532 12557	CASE, LENS CASE A	231V064010
002F		4822 381 11645	LENS (K)	231V355500
044F		4822 410 10344	KNOB, PUSH SW	231V154120
076F		4822 502 21687	SCREW, LAMP LID	231V010010

9. ELECTRICAL PARTS LIST

ASSIGNMENT OF COMMON PARTS CODES.

RESISTOR

R＊＊＊ : (1) GD05 x x x 140, Carbon film fixed resistor, ±5% 1/4W
R＊＊＊ : (2) GD05 x x x 160, Carbon film fixed resistor, ±5% 1/6W

① ——— Resistance value

Examples ;
① Resistance value

0.1 Ω.....001	10 Ω.....100	1 kΩ.....102	100 kΩ.....104
0.5 Ω.....005	18 Ω.....180	2.7 kΩ.....272	680 kΩ.....684
1 Ω.....010	100 Ω.....101	10 kΩ.....103	1 MΩ.....105
6.8 Ω.....068	390 Ω.....391	22 kΩ.....223	4.7 MΩ.....475

(Note) Please distinguish 1/4W from 1/6W by the shape of parts used actually.

C＊＊＊ : CERAMIC CAP.
(1) DD1x x x x 370, Ceramic capacitor
① ② Disc type
Temp. coeff. P350 ~ N1000, 50V
② Capacity value
① Tolerance

Examples ;
① Tolerance (Capacity deviation)
± 0.25pF 0
± 0.5pF 1
± 5% 5
＊Tolerance of COMMON PARTS handled here are as follows :
0.5pF ~ 5pF ..... ± 0.25pF
6pF ~ 10pF ..... ± 0.5pF
12pF ~ 560pF ..... ± 5%
② Capacity value

0.5 pF 005	3 pF 030	100 pF 101
1 pF 010	10 pF 100	220 pF 221
1.5 pF 015	47 pF 470	560 pF 561

C＊＊＊ : CERAMIC CAP.
(1) DK16 x x x 300, High dielectric constant ceramic capacitor
① Disc type
Temp. chara. 2B4, 50V
Capacity value

Examples ;
① Capacity value

100 pF.....101	1000 pF 102	10000 pF 103
470 pF.....471	2200 pF 222	

C＊＊＊ : ELECTROLY CAP. (⧺), FILM CAP. (∓)
(1) EA x x x x x x 10, Electrolytic capacitor
① ② One-way lead type, Tolerance ± 20%
Working voltage
Capacity value

Examples ;
① Capacity value

0.1 μF.....104	4.7 μF.....475	100 μF.....107
0.33 μF.....334	10 μF.....106	330 μF.....337
1 μF.....105	22 μF.....226	1100 μF.....118
		2200 μF.....228

② Working voltage

6.3 V.....006	25 V.....025	
10 V.....010	35 V.....035	
16 V.....016	50 V.....050	

(2) DF15 x x x 350 → Plastic film capacitor
DF15 x x x 310 → One-way type, Mylar ± 5% 50V
DF16 x x x 310 → Plastic film capacitor
One-way type, Mylar ± 10% 50V
①
Capacity value

Examples ;
① Capacity value

0.001 μF (1000pF) 102	0.1 μF.....104
0.0018 μF 182	0.56 μF.....564
0.01 μF 103	1 μF.....105
0.015 μF 153	

NOTE : 1) The above CODES (R＊＊＊, R＊＊＊, C＊＊＊, C＊＊＊ and C＊＊＊) are omitted on the schematic diagram in some case.
2) On the occasion, be confirmed common parts on the parts list.
3) Refer to "Common Parts List" for the other common parts (**R105, DD4, DK4**).

NOTE ON SAFETY FOR FUSIBLE RESISTOR :

The suppliers and their type numbers of fusible resistors aer as follows :

1. KOA Corporation

Part No.	Type No.	Description
NH05 x x x 140	→ RF25S x x x x Ω J	(± 5% 1/4W)
NH05 x x x 120	→ RF50S x x x x Ω J	(± 5% 1/2W)
NH85 x x x 110	→ RF73B2A x x x x Ω J	(± 5% 1/10W)
NH85 x x x 140	→ RF73B2E x x x x Ω J	(± 5% 1/4W)

＊ Resistance value — Resistance value (0.1 - 10kΩ)

2. Matsushita Electronic Components Co., Ltd

Part No.	Type No.	Description
NF05 x x x 140	→ ERD-2FCJ x x x	(± 5% 1/4W)
RF05 x x x 140		
NF02 x x x 140	→ ERD-2FCG x x x	(± 2% 1/4W)
RF02 x x x 140		

＊ Resistance value — ＊ Resistance value

Examples :
＊ Resistance value

0.1 Ω.....001	10 Ω.....100	1 kΩ.....102	100 kΩ.....104
0.5 Ω.....005	18 Ω.....180	2.7 kΩ.....272	680 kΩ.....684
1 Ω.....010	100 Ω.....101	10 kΩ.....103	1 MΩ.....105
6.8 Ω.....068	390 Ω.....391	22 kΩ.....223	4.7 MΩ.....475

ABBREVIATION AND MARKS

1	ANT.	: ANTENNA	2	BATT.	: BATTERY
3	CAP.	: CAPACITOR	4	CER.	: CERAMIC
5	CONN.	: CONNECTING	6	DIG.	: DIGITAL
7	HP	: HEADPHONE	8	MIC.	: MICROPHONE
9	μ-PRO	: MICROPROCESSOR	10	REC.	: RECORDING
11	RES.	: RESISTOR	12	SPK	: SPEAKER
13	SW	: SWITCH	14	TRANSF.	: TRANSFORMER
15	TRIM.	: TRIMMING	16	TRS.	: TRANSISTOR
17	VAR.	: VARIABLE	18	X'TAL	: CRYSTAL
19			20		
21			22		
23			24		
25			26		
27			28		
29			30		

NOTE ON SAFETY :

Symbol ⚠ Fire or electrical shock hazard. Only original parts should be used to replace any part marked with symbol ⚠ . Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

安全上の注意 :

⚠ がついている部品は、安全上重要な部品です。必ず指定されている部品番号の部品を使用して下さい。

[VERS.:VERSION, U:U.S.A, F:Japan, K:Far East, /XX:Europe]

POS. NO.	VERS. COLOR	PART NO. (PCS)	DESCRIPTION	PART NO. (MJI)
			PAD1-SIGNAL I/O CIRCUIT BOARD (WG228V1040)	
			PAD1-CAPACITORS	
C201		4822 126 11687	CER. 0.1µF 16V +80/-20%	DK98104200
C545		4822 126 11687	CER. 0.1µF 16V +80/-20%	DK98104200
			PAD1-RESISTORS	
R201		4822 051 30759	75 Ω ± 5% 1/16W	NN05750610
R202		4822 051 30759	75 Ω ± 5% 1/16W	NN05750610
			PBL1-LAMP CONTROLLER/LAMP HOLDER SW CIRCUIT BOARD (WG228V1080)	
			PBL1-CAPACITORS	
C001		4822 124 81275	100 µF 16V	EY10701620
C002		4822 122 32672	TANTL. 1 µF 16V ± 20% CHIP	EY10501610
C003		4822 124 41842	47 µF 16V ±20% CHIP	EY47601620
C004				
⚡		4822 126 11687	CER. 0.1 µF 16V +80/-20%	DK98104200
C011				
C013		4822 126 13396	CER. 0.047µF 16V ± 10%	DK96473200
			PBL1-RESISTORS	
R005		4822 051 30153	15K Ω ± 5% 1/16W	NN05153610
R006		4822 100 11605	10K Ω ± 25% 1/10W 50V	NY01030170
R007		4822 051 30333	33K Ω ± 5% 1/16W	NN05333610
R008		4822 051 30223	22K Ω ± 5% 1/16W	NN05223610
R009		4822 051 30222	2.2K Ω ± 5% 1/16W	NN05222610
R010		4822 051 30473	47K Ω ± 5% 1/16W	NN05473610
R011		4822 051 30223	22K Ω ± 5% 1/16W	NN05223610
R012		4822 051 30684	680 Ω ± 5% 1/16W	NN05681610
R013		4822 051 30684	680 Ω ± 5% 1/16W	NN05681610
R014		4822 051 30682	6.8K Ω ± 5% 1/16W	NN05682610
R015		4822 051 30684	680 Ω ± 5% 1/16W	NN05681610
R016		4822 051 30222	2.2K Ω ± 5% 1/16W	NN05222610
R017		4822 051 30472	4.7K Ω ± 5% 1/16W	NN05472610
R018		4822 051 30472	4.7K Ω ± 5% 1/16W	NN05472610
R019		4822 051 30222	2.2K Ω ± 5% 1/16W	NN05222610
R020		4822 051 30682	6.8K Ω ± 5% 1/16W	NN05682610
R021		4822 051 30331	330 Ω ± 5% 1/16W	NN05331610
R022				
⚡		4822 051 30222	2.2K Ω ± 5% 1/16W	NN05222610
R026				
R027				
⚡		4822 051 30331	330 Ω ± 5% 1/16W	NN05331610
R036				
R037		4822 051 30222	2.2KΩ ± 5% 1/16W	NN05222610
R038		4822 051 30222	2.2KΩ ± 5% 1/16W	NN05222610
			PBL1-SEMICONDUCTORS	
D001				
⚡		4822 130 83715	DIODE, 1SS301 CHIP	HZ21005000
D004				
IC01		4822 209 71676	IC, NJM2901M QUAD COMPARATOR	HC10043090
IC02		4822 130 82875	PHOTO UNIT ON3171 OPTO ISOLATOR	HW10001020
IC03		4822 209 90912	IC, N213 S.B.S	HC20001060
IC04		4822 130 20298	THYRISTOR AC12DSM TRIAC	HB10002060
Q001		4822 130 63598	TR. 2SA1586 CHIP	HX115862A0
Q002		4822 130 63598	TR. 2SA1586 CHIP	HX115862A0
Q003		4822 130 63598	TR. 2SA1586 CHIP	HX115862A0
Q004		4822 130 61541	TR. 2SC4116 CHIP	HX341162B0
Z001		4822 130 32364	ZENER, RD13E-B2	HD30049060
Z002		4822 130 10203	DIODE, 02CZ-6.2X(TE85L) CHIP	HZ30032050
			PIO1-SIGNAL INPUT CIRCUIT BOARD (WG228V1030)	
			PIO1-CAPACITORS	
C202		4822 126 11687	CER. 0.1µF 16V +80/-20%	DK98104200
C203		4822 126 11687	CER. 0.1µF 16V +80/-20%	DK98104200

POS. NO.	VERS. COLOR	PART NO. (PCS)	DESCRIPTION	PART NO. (MJI)
			PIO1-RESISTORS	
R206		4822 051 30759	75 Ω ± 5% 1/16W	NN05750610
R208		4822 116 82487	0 Ω ± 5% 1/16W	NN05000610
R210		4822 051 30759	75 Ω ± 5% 1/16W	NN05750610
R211		4822 116 82487	0 Ω ± 5% 1/16W	NN05000610
			PPL1-PANEL DRIVER CIRCUIT BOARD (WG228V1020)	
			PPL1-CAPACITORS	
C901				
⚡		4822 126 11687	CER. 0.1 µF 16V +80/-20%	DK98104200
C904				
C905		4822 126 11688	CER. 0.047 µF 16V +80/-20%	DK98473300
C906		4822 122 32672	TANTL. 1 µF 16V ± 20% CHIP	EY10501610
C907		4822 126 11688	CER. 0.047 µF 50V +80/-20%	DK98473300
C908		4822 126 11688	CER. 0.047 µF 50V +80/-20%	DK98473300
C909		4822 126 11687	CER. 0.1µF 16V +80/-20%	DK98104200
C910		4822 126 11688	CER. 0.047µF 50V +80/-20%	DK98473300
C911		4822 126 11685	CER. 4700PF 50V ± 10%	DK96472300
C912		4822 126 11687	CER. 0.1µF 16V +80/-20%	DK98104200
C913		4822 122 32672	TANTL. 1µF 16V ± 20% CHIP	EY10501610
C914		4822 126 11687	CER. 0.1µF 16V +80/-20%	DK98104200
C915		5322 126 11578	CER. 1000PF 50V ± 10%	DK96102300
C916		4822 122 33744	CER. 100PF 50V ± 5%	DD95101300
C917		4822 122 32672	TANTL. 1µF 16V ± 20% CHIP	EY10501610
C918		4822 122 32672	TANTL. 1µF 16V ± 20% CHIP	EY10501610
C919		4822 126 11685	CER. 4700PF 50V ± 10%	DK96472300
C920		4822 122 32672	TANTL. 1µF 16V ± 20% CHIP	EY10501610
			PPL1-RESISTORS	
R901				
⚡		4822 051 30103	10K Ω ± 5% 1/16W	NN05103610
R903				
R904		4822 051 30473	47K Ω ± 5% 1/16W	NN05473610
R905		4822 051 30223	22K Ω ± 5% 1/16W	NN05223610
R906		4822 051 30102	1K Ω ± 5% 1/16W	NN05102610
R907		4822 100 11801	10K Ω TRIM	NY01030160
R908		4822 116 82487	0 Ω ± 5% 1/16W	NN05000610
R909		4822 051 30682	6.8K Ω ± 5% 1/16W	NN05682610
R910		4822 051 30104	100K Ω ± 5% 1/16W	NN05104610
R911		4822 051 30684	680 Ω ± 5% 1/16W	NN05681610
R912		4822 051 30471	470 Ω ± 5% 1/16W	NN05471610
R913		4822 051 30472	4.7K Ω ± 5% 1/16W	NN05472610
R914		4822 051 30472	4.7K Ω ± 5% 1/16W	NN05472610
R915		4822 100 11801	10K Ω TRIM	NY01030160
R916		4822 051 30222	2.2K Ω ± 5% 1/16W	NN05222610
R917		4822 051 30223	22K Ω ± 5% 1/16W	NN05223610
			PPL1-SEMICONDUCTORS	
D901		4822 130 81324	DIODE, 1SS302 CHIP	HZ20018050
D902		4822 130 82475	DIODE, MA366 CHIP	HZ40006020
D903		4822 130 83715	DIODE, 1SS301 CHIP	HZ21005000
IC91		4822 209 13026	IC, ETM2011SOA PANEL CONTROLLER-1	HC10068530
IC92		4822 209 90896	IC, ETM1011TOA PANEL CONTROLLER-2	HC10063530
Q901		4822 130 61541	TRS. 2SC4116 CHIP	HX341162B0
Q902		4822 130 61541	TRS. 2SC4116 CHIP	HX341162B0
			PPL1-MISCELLANEOUS	
L901		4822 157 63234	CHIP INDUCTANCE 4.7 µH ± 20% NL322522	LU12472010
			PPS1-THERMAL SENSOR 1 CIRCUIT BOARD (WG2278V1090)	
			PPS1-MISCELLANEOUS	
S1A1		4822 276 13651	PUSH SWITCH SPPW8-6.55A2 LAMP HOLDER SW.	SP01012310
			PTV1-MAIN CIRCUIT BOARD (WG228V1010)	
			PTV1-CAPACITORS	
C102		4822 126 11688	CER. 0.047 µF 50V +80/-20%	DK98473300
C103		4822 126 11688	CER. 0.047 µF 50V +80/-20%	DK98473300
C104		4822 122 32672	TANTL. 1 µF 16V ± 20% CHIP	EY10501610

[VERS. :VERSION, U:U.S.A, F:Japan, K:Far East, /XX:Europe]

POS. NO.	VERS. COLOR	PART NO. (PCS)	DESCRIPTION	PART NO. (MJI)
C106		4822 122 32672	TANTL. 1 µF 16V ± 20% CHIP	EY10501610
C107		4822 126 11687	CER. 0.1 µF 50V +80/-20%	DK98104200
C108				
S		4822 126 11688	CER. 0.047 µF 50V +80/-20%	DK98473300
C114				
C115		4822 122 32672	TANTL. 1 µF 16V ± 20% CHIP	EY10501610
C116		4822 122 32672	TANTL. 1 µF 16V ± 20% CHIP	EY10501610
C117		4822 124 11074	10 µF 16V	EY10601620
C119		4822 124 81275	100 µF 16V	EY10701620
C120		5322 126 11583	CER. 0.01 µF ± 10% 25V	DK96103200
C151		4822 124 11229	4.7 µF 35V ± 20%	EY47503520
C152		4822 126 11566	CER. 2200 PF 50V ± 10%	DK96222300
C153		4822 124 81275	100 µF 16V	EY10701620
C154		4822 124 81275	100 µF 16V	EY10701620
C155		4822 122 32672	TANTL. 1 µF 16V ± 20% CHIP	EY10501610
C156		5322 126 11583	CER. 0.01 µF 25V ± 10%	DK96103200
C157		5322 126 11578	CER. 1000 PF 50V ± 10%	DK96102300
C158		4822 124 81275	100 µF 16V	EY10701620
C160		4822 124 11074	10 µF 16V	EY10601620
C161		4822 124 11074	10 µF 16V	EY10601620
C162		4822 124 10772	100 µF 6.3V	EY10700620
C163		4822 124 10772	100 µF 6.3V	EY10700620
C164		4822 124 41842	47 µF 16V ± 20%	EY47601620
C165		4822 124 41842	47 µF 16V ± 20%	EY47601620
C601				
S		4822 122 33777	CER. 47 PF 50V ± 5%	DD95470300
C605				
C606		4822 125 60155	TRIMMER 20PF TRIM ACITOR CHIP	CX12000020
C607		4822 122 33777	CER. 47 PF 50V ± 5%	DD95470300
C608		4822 122 33744	CER. 100 PF 50V ± 5%	DD95101300
C609		4822 126 11687	CER. 0.1 µF 16V +80/-20%	DK98104200
C610		4822 126 11687	CER. 0.1 µF 16V +80/-20%	DK98104200
C611		4822 126 11682	CER. 220 PF 50V ± 10%	DK96221300
C651		4822 126 11687	CER. 0.1 µF 16V +80/-20%	DK98104200
C652		4822 126 13837	CER. 0.1 µF 10V ± 10%	DK96104200
C653		4822 126 13396	CER. 0.047 µF 16V ± 10%	DK96473200
C654		4822 126 11687	CER. 0.1 µF 16V +80/-20%	DK98104200
C655		5322 126 11578	CER. 1000 PF 50V ± 10%	DK96102300
C656		5322 126 11578	CER. 1000 PF 50V ± 10%	DK96102300
C658		5322 126 11578	CER. 1000 PF 50V ± 10%	DK96102300
C659		4822 126 11687	CER. 0.1 µF 16V +80/-20%	DK98104200
C660		4822 126 11687	CER. 0.1 µF 16V +80/-20%	DK98104200
C661		4822 126 11682	CER. 220 PF 50V ± 10%	DK96221300
C662		4822 126 11687	CER. 0.1 µF 16V +80/-20%	DK98104200
C663		4822 126 11687	CER. 0.1 µF 16V +80/-20%	DK98104200
C664		4822 126 11682	CER. 220 PF 50V ± 10%	DK96221300
C665		4822 126 11687	CER. 0.1 µF 16V +80/-20%	DK98104200
C666		4822 126 11687	CER. 0.1 µF 16V +80/-20%	DK98104200
C667		4822 126 11682	CER. 220 PF 50V ± 10%	DK96221300
C668		4822 126 11687	CER. 0.1 µF 16V +80/-20%	DK98104200
C669		4822 126 11687	CER. 0.1 µF 16V +80/-20%	DK98104200
C670		4822 126 11702	CER. 680 PF 50V ± 10%	DK96681300
C671		4822 126 11702	CER. 680 PF 50V ± 10%	DK96681300
C681		4822 124 11472	TANTL. 10 µF 10V	EY1060107R
C6A1		4822 122 33744	CER. 100 PF 50V ± 50%	DD95101300
C6A2			TANTL. 4.7 µF 10V ± 20% CHIP	EY47501050
C801				
S		4822 124 11074	10 µF 16V	EY10601620
C803				
C804		4822 126 11687	CER. 0.1 µF 16V +80/-20%	DK98104200
C805		4822 124 11074	10 µF 16V	EY10601620
C806		4822 122 33761	CER. 22 PF 50V ± 5%	DD95220300
C807		4822 122 33777	CER. 47 PF 50V ± 5%	DD95470300
C808		4822 126 11687	CER. 0.1 µF 16V +80/-20%	DK98104200
C809		4822 126 11687	CER. 0.1 µF 16V +80/-20%	DK98104200
C810		4822 126 11687	CER. 0.1 µF 16V +80/-20%	DK98104200
C811		4822 126 11704	CER. 0.022 µF 50V +80/-20%	DK98223300
C812				
S		4822 126 11687	CER. 0.1 µF 16V +80/-20%	DK98104200
C821				
C822		5322 126 11578	CER. 1000 PF 50V ± 10%	DK96102300
C823		4822 126 11687	CER. 0.1 µF 16V +80/-20%	DK98104200
C824		4822 126 11685	CER. 4700 PF 50V ± 10%	DK96472300
C825				
S		4822 122 33741	CER. 10 PF 50V ± 0.5 PF	DD91100300
C828				
C829		4822 122 32672	TANTL. 1 µF 16V ± 20% CHIP	EY10501610

POS. NO.	VERS. COLOR	PART NO. (PCS)	DESCRIPTION	PART NO. (MJI)
C830		4822 126 11685	CER. 4700 PF 50V ± 10%	DK96472300
C831		4822 126 11685	CER. 4700 PF 50V ± 10%	DK96472300
C832		4822 126 11568	CER. 470 PF 50V ± 10%	DK96471300
C833				
S		4822 126 11687	CER. 0.1µ F 16V +80/-20%	DK98104200
C836				
C837		5322 126 11578	CER. 1000 PF 50V ± 10%	DK96102300
C838		5322 126 11578	CER. 1000 PF 50V ± 10%	DK96102300
C839		4822 126 11704	CER. 0.022 µF 50V +80/-20%	DK98223300
C840				
S		4822 126 11687	CER. 0.1 µF 16V +80/-20%	DK98104200
C842				
C843		4822 122 33785	CER. 68 PF 50V ± 5%	DD95680300
C845		4822 122 32672	TANTL. 1µ F 16V ± 20% CHIP	EY10501610
C846		4822 124 11074	10µ F 16V	EY10601620
C847				
S		4822 126 11671	CER. 33 PF 50V ± 5%	DD95330300
C849				
C851				
S		4822 126 11687	CER. 0.1 µF 16V +80-20%	DK98104200
C857				
C858		4822 122 32672	TANTL. 1µ F 16V ± 20% CHIP	EY10501610
C859		4822 126 11702	CER. 680 PF 50V ± 10%	DK96681300
C860		4822 122 33753	CER. 150 PF 50V ± 5%	DD95151300
C861				
S		5322 126 11583	CER. 0.01 µF 25V ± 10%	DK96103200
C866				
C867				
S		4822 122 32672	TANTL. 1 µF 16V ± 20% CHIP	EY10501610
C870				
C871		5322 126 11583	CER. 0.01 µF 25V ± 10%	DK96103200
C872		5322 126 11583	CER. 0.01 µF 25V ± 10%	DK96103200
C873		4822 126 11687	CER. 0.1 µF 16V +80/-20%	DK98104200
C874				
S		5322 126 11583	CER. 0.01 µF 25V ± 10%	DK96103200
C876				
C8A1		4822 124 11074	10 µF 16V	EY10601620
C8A2		4822 126 11687	CER. 0.1 µF 16V +80/-20%	DK98104200
C8A3		4822 126 11687	CER. 0.1 µF 16V +80/-20%	DK98104200
C8A4		4822 126 11687	CER. 0.1 µF 16V +80/-20%	DK98104200
C8A5		4822 122 32672	TANTL 1 µF 16V ± 20% CHIP	EY10501610
			PTV1-RESISTORS	
R101		4822 051 30472	4.7K Ω ± 5% 1/16W	NN05472610
R102		4822 051 30472	4.7K Ω ± 5% 1/16W	NN05472610
R103		4822 051 30471	470 Ω ± 5% 1/16W	NN05471610
R104		4822 051 30103	10K Ω ± 5% 1/16W	NN05103610
R105		4822 051 30103	10K Ω ± 5% 1/16W	NN05103610
R106		4822 051 30153	15K Ω ± 5% 1/16W	NN05153610
R107		4822 051 30103	10K Ω ± 5% 1/16W	NN05103610
R108		4822 051 30153	15K Ω ± 5% 1/16W	NN05153610
R109		4822 051 30473	47K Ω ± 5% 1/16W	NN05473610
R110		4822 051 30153	15K Ω ± 5% 1/16W	NN05153610
R111		4822 051 30153	15K Ω ± 5% 1/16W	NN05153610
R112		4822 051 30223	22K Ω ± 5% 1/16W	NN05223610
R113		4822 051 30472	4.7K Ω ± 5% 1/16W	NN05472610
R114		4822 051 30223	22K Ω ± 5% 1/16W	NN05223610
R115		4822 051 30333	33K Ω ± 5% 1/16W	NN05333610
R116		4822 051 30103	10K Ω ± 5% 1/16W	NN05103610
R117		4822 051 30684	680K Ω ± 5% 1/16W	NN05684610
R118		4822 051 30473	47K Ω ± 5% 1/16W	NN05473610
R119		4822 051 30473	47K Ω ± 5% 1/16W	NN05473610
R120		4822 051 30104	100K Ω ± 5% 1/16W	NN05104610
R121		4822 051 30684	680K Ω ± 5% 1/16W	NN05684610
R122		4822 051 30473	47K Ω ± 5% 1/16W	NN05473610
R123		4822 051 30473	47K Ω ± 5% 1/16W	NN05473610
R124		4822 051 30223	22K Ω ± 5% 1/16W	NN05223610
R125		4822 051 30473	47K Ω ± 5% 1/16W	NN05473610
R126		4822 051 30473	47K Ω ± 5% 1/16W	NN05473610
R127		4822 051 30223	22K Ω ± 5% 1/16W	NN05223610
R128				
S		4822 051 30103	10K Ω ± 5% 1/16W	NN05103610
R132				
R133		4822 051 30473	47K Ω ± 5% 1/16W	NN05473610
R134		4822 051 30472	4.7K Ω ± 5% 1/16W	NN05472610
R135		4822 051 30472	4.7K Ω ± 5% 1/16W	NN05472610
R136		4822 051 30153	15K Ω ± 5% 1/16W	NN05153610

[VERS. :VERSION, U:U.S.A, F:Japan, K:Far East, /XX:Europe]

POS. NO.	VERS. COLOR	PART NO. (PCS)	DESCRIPTION	PART NO. (MJI)
R151				
⚡		4822 051 30102	1K Ω ±5% 1/16W	NN05102610
R154				
R155				
⚡		4822 051 30223	22K Ω ±5% 1/16W	NN05223610
R157				
R158		4822 051 30224	220K Ω ±5% 1/16W	NN05224610
R159		4822 051 30684	680K Ω ±5% 1/16W	NN05684610
R160		4822 051 30683	68K Ω ±5% 1/16W	NN05683610
R161		4822 051 30153	15K Ω ±5% 1/16W	NN05153610
R162		4822 051 30102	1K Ω ±5% 1/16W	NN05102610
R163		4822 051 30101	100 Ω ±5% 1/16W	NN05101610
R164		4822 100 11787	1K Ω TRIM	NY01020160
R165		4822 051 30223	22K Ω ±5% 1/16W	NN05223610
R166		4822 051 30682	6.8K Ω ±5% 1/16W	NN05682610
R167		4822 051 30334	330K Ω ±5% 1/16W	NN05334610
R168		4822 051 30479	47 Ω ±5% 1/16W	NN05470610
R169		4822 051 30684	680 Ω ±5% 1/16W	NN05681610
R170		4822 051 30153	15K Ω ±5% //16W	NN05153610
R601		4822 051 30103	10K Ω ±5% 1/16W	NN05103610
R602		4822 051 30103	10K Ω ±5% 1/16W	NN05103610
R603		4822 051 30153	15K Ω ±5% 1/16W	NN05153610
R604		4822 051 30223	22K Ω ±5% 1/16W	NN05223610
R610		4822 051 30103	10K Ω ±5% 1/16W	NN05103610
R611		4822 051 30223	22K Ω ±5% 1/16W	NN05223610
R612		4822 051 30223	22K Ω ±5% 1/16W	NN05223610
R613		4822 051 30103	10K Ω ±5% 1/16W	NN05103610
R614		4822 051 30103	10K Ω ±5% 1/16W	NN05103610
R615		4822 051 30223	22K Ω ±5% 1/16W	NN05223610
R616				
⚡		4822 051 30103	10K Ω ±5% 1/16W	NN05103610
R618				
R651		4822 051 30334	330K Ω ±5% 1/16W	NN05334610
R652		4822 051 30153	15K Ω ±5% 1/16W	NN05153610
R653		4822 100 11792	50K Ω TRIM	NY05030160
R654		4822 051 30683	68K Ω ±5% 1/16W	NN05683610
R655		4822 051 30104	100K Ω ±5% 1/16W	NN05104610
R657		4822 051 30683	68K Ω ±5% 1/16W	NN05683610
R661		4822 051 30223	22K Ω ±5% 1/16W	NN05223610
R662		4822 051 30153	15K Ω ±5% 1/16W	NN05153610
R663		4822 051 30103	10K Ω ±5% 1/16W	NN05103610
R665		4822 051 30473	47K Ω ±5% 1/16W	NN05473610
R667		4822 051 30104	100K Ω ±5% 1/16W	NN05104610
R669		4822 051 30683	68K Ω ±5% 1/16W	NN05683610
R671		4822 051 30102	1K Ω ±5% 1/16W	NN05102610
R672		4822 051 30473	47K Ω ±5% 1/16W	NN05473610
R673				
⚡		4822 051 30223	22K Ω ±5% 1/16W	NN05223610
R675				
R676		4822 051 30103	10K Ω ±5% 1/16W	NN05103610
R677		4822 051 30103	10K Ω ±5% 1/16W	NN05103610
R678		4822 051 30102	1K Ω ±5% 1/16W	NN05102610
R679		4822 051 30472	4.7K Ω ±5% 1/16W	NN05472610
R680		4822 051 30222	2.2K Ω ±5% 1/16W	NN05222610
R681		4822 051 30683	68K Ω ±5% 1/16W	NN05683610
R682		4822 051 30104	100K Ω ±5% 1/16W	NN05104610
R683		4822 051 30153	15K Ω ±5% 1/16W	NN05153610
R684		4822 051 30334	330K Ω ±5% 1/16W	NN05334610
R685		4822 051 30223	22K Ω ±5% 1/16W	NN05223610
R686		4822 051 30103	10K Ω ±5% 1/16W	NN05103610
R687		4822 051 30103	10K Ω ±5% 1/16W	NN05103610
R688		4822 116 82487	0 Ω	NN05000610
R689		4822 051 30472	4.7K Ω ±5% 1/16W	NN05472610
R690		4822 051 30222	2.2K Ω ±5% 1/16W	NN05222610
R691		4822 051 30224	220K Ω ±5% 1/16W	NN05224610
R692		4822 051 30683	68K Ω ±5% 1/16W	NN05683610
R693		4822 051 30153	15K Ω ±5% 1/16W	NN05153610
R694		4822 051 30104	100K Ω ±5% 1/16W	NN05104610
R6A1		4822 051 30103	10K Ω ±5% 1/16W	NN05103610
R6A2		4822 051 30473	47K Ω ±5% 1/16W	NN05473610
R6A3		4822 051 30223	22K Ω ±5% 1/16W	NN05223610
R6A4		4822 051 30682	6.8K Ω ±5% 1/16W	NN05682610
R6A5		4822 051 30103	10K Ω ±5% 1/16W	NN05103610
R6A6		4822 051 30223	22K Ω ±5% 1/16W	NN05223610

POS. NO.	VERS. COLOR	PART NO. (PCS)	DESCRIPTION	PART NO. (MJI)
R801		4822 051 30223	22K Ω ±5% 1/16W	NN05223610
R802		4822 051 30223	22K Ω ±5% 1/16W	NN05223610
R803		4822 051 30153	15K Ω ±5% 1/16W	NN05153610
R804		4822 051 30103	10K Ω ±5% 1/16W	NN05103610
R805		4822 051 30331	330 Ω ±5% 1/16W	NN05331610
R806		4822 051 30332	3.3K Ω ±5% 1/16W	NN05332610
R807		4822 051 30151	150 Ω ±5% 1/16W	NN05151610
R808		4822 051 30472	4.7K Ω ±5% 1/16W	NN05472610
R809		4822 051 30682	6.8K Ω ±5% 1/16W	NN05682610
R810		4822 051 30153	15K Ω ±5% 1/16W	NN05153610
R811		4822 051 30472	4.7K Ω ±5% 1/16W	NN05472610
R812		4822 051 30223	22K Ω ±5% 1/16W	NN05223610
R813		4822 051 30223	22K Ω ±5% 1/16W	NN05223610
R814		4822 051 30153	15K Ω ±5% 1/16W	NN05153610
R815		4822 051 30332	3.3K Ω ±5% 1/16W	NN05332610
R816		4822 051 30103	10K Ω ±5% 1/16W	NN05103610
R817		4822 051 30224	220K Ω ±5% 1/16W	NN05224610
R818		4822 051 30682	6.8K Ω ±5% 1/16W	NN05682610
R819		4822 051 30104	100K Ω ±5% 1/16W	NN05104610
R820		4822 051 30153	15K Ω ±5% 1/16W	NN05153610
R821		4822 051 30103	10K Ω ±5% 1/16W	NN05103610
R822		4822 051 30472	4.7K Ω ±5% 1/16W	NN05472610
R823		4822 051 30474	470K Ω ±5% 1/16W	NN05474610
R824		4822 051 30103	10K Ω ±5% 1/16W	NN05103610
R825		4822 051 30223	22K Ω ±5% 1/16W	NN05223610
R826		4822 051 30472	4.7K Ω ±5% 1/16W	NN05472610
R827		4822 051 30473	47K Ω ±5% 1/16W	NN05473610
R829		4822 116 82487	0 Ω	NN05000610
R830		4822 051 30223	22K Ω ±5% 1/16W	NN05223610
R832		4822 051 30333	33K Ω ±5% 1/16W	NN05333610
R833				
⚡		4822 051 30331	330 Ω ±5% 1/16W	NN05331610
R835				
R840		4822 051 30223	22K Ω ±5% 1/16W	NN05223610
R841		4822 051 30223	22K Ω ±5% 1/16W	NN05223610
R842		4822 051 30221	220 Ω ±5% 1/16W	NN05221610
R843		4822 051 30223	22K Ω ±5% 1/16W	NN05223610
R851				
⚡		4822 051 30684	680 Ω ±5% 1/16W	NN05681610
R853				
R854				
⚡		4822 051 30102	1K Ω ±5% 1/16W	NN05102610
R859				
R860				
⚡		4822 051 30332	3.3K Ω ±5% 1/16W	NN05332610
R862				
R863		4822 051 30684	680 Ω ±5% 1/16W	NN05681610
R864		4822 051 30102	1K Ω ±5% 1/16W	NN05102610
R865		4822 051 30333	33K Ω ±5% 1/16W	NN05333610
R866		4822 051 30102	1K Ω ±5% 1/16W	NN05102610
R867		4822 100 11792	50K Ω TRIM	NY05030160
R868		4822 051 30102	1K Ω ±5% 1/16W	NN05102610
R869		4822 051 30102	1K Ω ±5% 1/16W	NN05102610
R870		4822 100 11792	50K Ω TRIM	NY05030160
R871		4822 051 30102	1K Ω ±5% 1/16W	NN05102610
R872		4822 051 30473	47K Ω ±5% 1/16W	NN05473610
R873		4822 051 30473	47K Ω ±5% 1/16W	NN05473610
R874		4822 051 30102	1K Ω ±5% 1/16W	NN05102610
R875		4822 100 11792	50K Ω TRIM	NY05030160
R876		4822 051 30103	10K Ω ±5% 1/16W	NN05103610
R877		4822 051 30102	1K Ω ±5% 1/16W	NN05102610
R878		4822 100 11792	50K Ω TRIM	NY05030160
R879		4822 051 30103	10K Ω ±5% 1/16W	NN05103610
R880		4822 051 30102	1K Ω ±5% 1/16W	NN05102610
R881		4822 100 11792	50K Ω TRIM	NY05030160
R882		4822 051 30102	1K Ω ±5% 1/16W	NN05102610
R883		4822 051 30102	1K Ω ±5% 1/16W	NN05102610
R884		4822 100 11792	50K Ω TRIM	NY05030160
R885		4822 051 30102	1K Ω ±5% 1/16W	NN05102610
R890		4822 116 82487	0 Ω	NN05000610
R891		4822 051 30333	33K Ω ±5% 1/16W	NN05333610
R892		4822 051 30333	33K Ω ±5% 1/16W	NN05333610
R894		4822 051 30333	33K Ω ±5% 1/16W	NN05333610
R895		4822 051 30333	33K Ω ±5% 1/16W	NN05333610
R897		4822 051 30333	33K Ω ±5% 1/16W	NN05333610
R898		4822 051 30333	33K Ω ±5% 1/16W	NN05333610
R8A1		4822 051 30333	33K Ω ±5% 1/16W	NN05333610

[VERS. :VERSION, U:U.S.A, F:Japan, K:Far East, /XX:Europe]

POS. NO.	VERS. COLOR	PART NO. (PCS)	DESCRIPTION	PART NO. (MJI)
R8A2		4822 051 30333	33K Ω ±5% 1/16W	NN05333610
R8A3		4822 051 30102	1K Ω ±5% 1/16W	NN05102610
R8A4		4822 051 30682	6.8K Ω ±5% 1/16W	NN05682610
R8A5		4822 100 11605	10K Ω ±25% 1/16W 50V	NY01030170
R8A6		4822 051 30102	1K Ω ±5% 1/16W	NN05102610
R8A7		4822 051 30682	6.8K Ω ±5% 1/16W	NN05682610
R8A8		4822 051 30223	22K Ω ±5% 1/16W	NN05223610
R8A9		4822 051 30682	6.8K Ω ±5% 1/16W	NN05682610
			PTV1-SEMICONDUCTORS	
▲D101				
S		4822 130 10204	DIODE, D2FS4 S.B. CHIP	HZ20004290
▲D104				
D105		4822 130 81324	DIODE, 1SS302 CHIP	HZ20018050
D106		4822 130 83715	DIODE, 1SS301 CHIP	HZ21005000
D107		4822 130 83715	DIODE, 1SS301 CHIP	HZ21005000
D108		4822 130 81324	DIODE, 1SS302 CHIP	HZ20018050
D151				
S		4822 130 70023	L.E.D., SML-020MVT	HI10096210
D153				
D154		4822 130 83287	DIODE, D1FS6 CHIP	HZ20002290
D155		4822 130 83715	DIODE, 1SS301 CHIP	HZ21005000
D156		4822 130 83715	DIODE, 1SS301 CHIP	HZ21005000
D157		4822 130 81324	DIODE, 1SS302 CHIP	HZ20018050
D651		4822 130 83715	DIODE, 1SS301 CHIP	HZ21005000
D652		4822 130 83715	DIODE, 1SS301 CHIP	HZ21005000
D662		4822 130 83715	DIODE, 1SS301 CHIP	HZ21005000
D663		4822 130 83715	DIODE, 1SS301 CHIP	HZ21005000
D681		4822 130 83715	DIODE, 1SS301 CHIP	HZ21005000
D682		4822 130 81324	DIODE, 1SS302 CHIP	HZ20018050
D6A1		4822 130 83715	DIODE, 1SS301 CHIP	HZ21005000
D801		4822 130 83715	DIODE, 1SS301 CHIP	HZ21005000
D803		4822 130 81324	DIODE, 1SS302 CHIP	HZ20018050
D804		4822 130 81324	DIODE, 1SS302 CHIP	HZ20018050
D805		4822 130 83715	DIODE, 1SS301 CHIP	HZ21005000
D806		4822 130 83715	DIODE, 1SS301 CHIP	HZ21005000
D8A1		4822 130 81324	DIODE, 1SS302 CHIP	HZ20018050
D8A2		4822 130 81324	DIODE, 1SS302 CHIP	HZ20018050
D8A3		4822 130 83715	DIODE, 1SS301 CHIP	HZ21005000
▲IC11		4822 209 63385	IC, NJM78L05M	HC90005090
IC12		4822 209 71448	IC, NJM2903M	HC10096090
IC13		4822 209 60334	IC, TC4S81F 1GATE AND	HC10182050
IC14		4822 209 60119	IC, FA7610 FOR DC /DC CONVERTER	HC10001130
IC61		4822 209 13027	MICROPROCESSOR TMP47C834F MPU FOR 231V/228V	HU231VT020
IC62		4822 209 61645	IC, M51951AML RESET IC	HC10098200
IC63		4822 209 90902	IC, BR93LC46AF EEP-ROM	HC10181210
IC64		5322 209 72624	IC, TC4538BF MONO-MULTI	HC453800Z0
IC65		4822 209 33522	IC, TC4584F SCHMITT INV	HC458400I0
IC66		4822 209 61494	IC, TC74HC74F D FLIP-FROP	HC707400Z0
IC67		4822 209 31421	IC, TC4W53F ANALOG SW	HC10333050
IC68		4822 209 13029	IC, 4071 QUAD 2INPUT OR GATE	HC407100I0
IC81		4822 209 13025	IC, MM1117XF 3INPUT VIDEO SW	HC10067550
IC82		4822 209 32358	IC, TDA8362	HC10100490
IC83		4822 209 13028	IC, TDA4665T DELAY LINE IC	HC10133490
IC84		4822 209 90129	IC, TDA8395 SECAM DECODER	HC10101490
IC85		4822 209 60334	IC, TC4S81F 1GATE AND	HC10182050
IC86		4822 209 32357	IC, IR3P89 LCD INTERFACE	HC10041320
IC87		4822 209 60334	IC, TC4S81F 1-GATE AND	HC10182050
▲Q101		4822 130 42254	TRS. 2SD1275	HT412751P0
Q102		4822 130 63598	TRS. 2SA1586 CHIP	HX115862A0
Q103				
S		4822 130 61541	TRS. 2SC4116 CHIP	HX341162B0
Q106				
Q107		4822 130 63598	TRS. 2SA1586 CHIP	HX115862A0
Q108				
S		4822 130 60856	DIG. TRS. DTC144EU	BA20021210
Q110				
Q111		4822 130 61541	TRS. 2SC4116 CHIP	HX341162B0
Q112		4822 130 61425	TRS. 2SC2873 CHIP	HX328731B0
Q113		4822 130 61541	TRS. 2SC4116 CHIP	HX341162B0
Q114		4822 130 61425	TRS. 2SC2873 CHIP	HX328731B0

POS. NO.	VERS. COLOR	PART NO. (PCS)	DESCRIPTION	PART NO. (MJI)
Q151				
S		4822 130 61541	TRS. 2SC4116	HX341162B0
Q153				
Q154		4822 130 63003	TRS. 2SD1803	HX418031C0
Q601		4822 130 61541	TRS. 2SC4116	HX341162B0
Q611		4822 130 61541	TRS. 2SC4116	HX341162B0
Q613		4822 130 63598	TRS. 2SA1586	HX115862A0
Q614				
S		4822 130 61541	TRS. 2SC4116	HX341162B0
Q618				
Q619		4822 130 60856	DIG. TRS. DTC144EU	BA20021210
Q681		4822 130 60856	DIG. TRS. DTC144EU	BA20021210
Q682		4822 130 60856	DIG. TRS. DTC144EU	BA20021210
Q6A1		4822 130 61541	TRS. 2SC4116 CHIP	HX341162B0
Q6A2		4822 130 63598	TRS. 2SA1586 CHIP	HX115862A0
Q6A3		4822 130 61541	TRS. 2SC4116 CHIP	HX341162B0
Q801				
S		4822 130 61541	TRS. 2SC4116 CHIP	HX341162B0
Q804				
Q805		4822 130 60856	DIG. TRS. DTC144EE	BA20021210
Q806		4822 130 61541	TRS. 2SC4116 CHIP	HX341162B0
Q8A1		4822 130 61541	TRS. 2SC4116 CHIP	HX341162B0
Q8A2		4822 130 61541	TRS. 2SC4116 CHIP	HX341162B0
			PTV1-MISCELLANEOUS	
▲F101		4822 070 33152	FUSE T3 15A/250V 166050 SEMKO/VDE	FS20315090
L151		4822 157 70361	CHOKE COIL 220 µH CD-75	LC12244400
L152		4822 157 70361	CHOKE COIL 220 µH CD-75	LC12244400
L153				
S		4822 157 60429	CHIP INDUCTANCE 1000 µH LQH4N	LU23105010
L155				
L601		4822 157 70272	CHIP INDUCTANCE 47 µH ± 10%	LU12473010
L801		4822 157 53874	CHIP INDUCTANCE 150 µH ± 10%	LU12154010
L802		4822 157 53874	CHIP INDUCTANCE 150 µH ± 10%	LU12154010
X601		4822 242 81283	SERAMIC VIB. EF0V4004E5 4.00MHZ	FQ04004070
X801		4822 242 81485	CRYSTAL 3.58MHZ TDA8362	JX03014100
X802		4822 242 81486	CRYSTAL 4.43MHZ TDA8362	JX04011100
Z101		4822 130 83615	DIODE 02CZ13-X	HZ31302050
Z102		4822 130 83615	DIODE 02CZ13-X	HZ31302050
			OTHERS-WITHOUT ON PC BOARD	
			OTHERS-SEMICONDUCTORS	
▲F110		4822 070 32502	FUSE T2.5A/250V S506 BS/SEMKO	FS10250850
PL01		4822 135 00021	LCD KIT, LCD PANEL T13KM025	KZ14501530
			OTHERS-MISCELLANEOUS	
▲M101		4822 361 10749	D.C MOTOR FBA06A12H	MM01200260
▲M102		4822 361 10749	D.C MOTOR FBA06A12H	MM01200260